American
Cinematographer
International Journal of Film and Video Production Techniques
JUNE 1982/$2.50
FOREIGN $3.00

T-N-99/99-0001-000MEMBER-999
0020732 RYAN
RODERICK
EASTMAN KODAK
6706 SANTA MONICA BLVD
HOLLYWOOD CA 90038

Annie
TM

...AND HOW IT WAS FILMED

LATE CITY EDITION

Better Times

WEATHER: Mostly sunny today. Clear and sunny tomorrow.

NEW YORK, NEW YORK (It's a wonderful town)

WE'RE VIDEO CITY AGAIN!

TV Returns to New York

In the mid 1950's major television production relocated to the west coast (and we felt it). Today, however, more and more producers and directors are feeling that the New York atmosphere is essential to the success of their product. . . and television is coming home!

One of the reasons it's going to *stay* home is **CSC Video,** New York's favorite source for TV production and broadcast equipment. It is a turn-key operation, designing entire systems down to individual pieces. . . and backing them up with complete service support for the end user.

CSC Video is the professional choice of a wide range of markets, including broadcasting, medical, industrial, electronic news gathering and electronic field production. In addition, **CSC**'s consulting engineers are perfecting cable and pay-TV systems to meet the growing demand for individual programming.

TOP NAMES

You and your production crew can rely on **CSC** for rentals, sales and service featuring such respected names as Crosspoint Latch, Ikegami, Sony, Tektronix, Toshiba and many, many more.

CSC Video equips and services virtually all phases of television and cable production.

TV is completely at home with **CSC Video** in New York . . . and you will be too!

CSC VIDEO ©

TV's Production Equipment Source

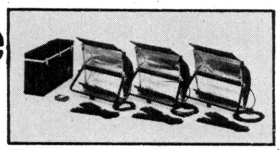
Write or call for information.

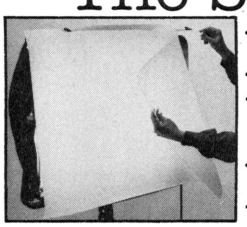
Camera Service Center, Inc. • 625 West 54th Street • New York 10019 • (212) 757-0906

540 West 36th Street, New York, NY 10018 (212) 594-8700

NEW SOFTLIGHT 2. IT WILL DAZZLE YOUR METER—AND YOU.

The new, Lowel Softlight 2 (like its distinguished predecessor) folds in half, nearly flat. And three of these patented units still travel in one portable case—with their barndoors.





The Softlight 2 (unlike its predecessor) has 2000 watt capability (50% brighter), individual switching of lamps, and a way to hold gels.

Lowel Softlight 2. It will dazzle your meter and make your subject—no matter how distant or dull—positively radiant.

For details on equipment, kits, dealers, and how to retrofit your old Softlight, contact:
Lowel-Light Mfg., Inc.
475 Tenth Ave. N.Y., N.Y. 10018 (212) 947-0950.
West coast: 3407 W. Olive Ave., Burbank Ca. 91505 (213)846-7740.

lowel®

American Cinematographer
International Journal of Motion Picture Photography and Production Techniques

The American Society of Cinematographers is not a labor union or a guild, but is an educational, cultural and professional organization. Membership is by invitation to those who are actively engaged as Directors of Photography and have demonstrated outstanding ability. Not all cinematographers can place the initials A.S.C. after their names. A.S.C. membership has become one of the highest honors that can be bestowed upon a professional cinematographer, a mark of prestige and distinction.

Herb A. Lightman
editor

Richard Patterson
video editor

Lyla Dusing
assistant editor

Barry Day
production control

Jean Turner
advertising

Patty Armacost
circulation

Barbara Prevedel
accounting

Gabrielle de Ganges
layout assembly

Contributing Editors
David Samuelson
Sidney P. Solow
Anton Wilson

Book Review Editor
George L. George

Editorial Advisory Committee
Milton Krasner, Chairman
Stanley Cortez
Linwood Dunn
George Folsey
Ernest Laszlo
Sam Leavitt
Gene Polito
Lester Shorr
Harry Wolf
Ralph Woolsey

Executive Director
Al Keller

Editorial—Advertising—Business Offices
1782 North Orange Drive
Hollywood, Calif. 90028
(213) 876-5080

Send mail to
P.O. Box 2230
Hollywood, CA 90028

JUNE 1982 VOL. 63, NO. 6

● **FEATURE ARTICLES**

539 "JAZZMAN" — A Student Film That is More Than A Student Film
545 The Recording Camera
551 Single Camera Video Production — PART I: Shooting "HARPER VALLEY P.T.A." with the *PANACAM*
556 "ANNIE"... and How It Was Filmed
560 Behind the Cameras for the Filming of "ANNIE"
570 The Challenges of Photographing "EVEREST IN WINTER"
580 IMAX and "THE ERUPTION OF MT. ST. HELENS"
590 The Fourth Houston International Film Festival
597 Video Synthesis: Real Time Analogue Special Effects

● **DEPARTMENTS**

528 What's New
530 The Bookshelf
532 Cinema Workshop
536 Roster of A.S.C. Membership
588 Talking Technically
609 Questions & Answers

ON THE COVER: Two of the stars of the new $35 million musical film, "ANNIE," a Ray Stark production of a John Huston Film for Columbia Pictures. Adapted from the long-running stage production, the film version of "ANNIE" was produced by Ray Stark, directed by John Huston and photographed by Richard Moore, ASC.

AMERICAN CINEMATOGRAPHER, (ISSN 0002-7928) established 1920, in 63rd year of publication is published monthly in Hollywood by ASC Holding Corp., P.O. Box 2230, Hollywood, California 90028, U.S.A. **SUBSCRIPTIONS:** U.S. $20.00; Canada/Mexico $25.00; all other foreign countries $30.00 a year (remit International Money Order or other exchange payable in U.S.). **ADVERTISING:** rate card on request to Hollywood office. Copyright 1982 ASC Holding Corp. Second-class postage paid at Los Angeles, California and at additional mailing offices. **POSTMASTER:** send form 3579, with change of address to, ASC Holding Corp., P.O. Box 2230, Hollywood, CA 90028.

congratulations

to **Vittorio Storaro** for his Oscar winning cinematography for Reds and congratulations to the nominees

Douglas Slocombe BSC
for Raiders of the Lost Ark
Alex Thompson BSC for Excalibur
Billy Williams BSC for On Golden Pond
Miroslav Ondricek for Ragtime

thank you for using The World's Number 1

Main U.S. Distributor

Belden Communications Incorporated
534 West 25th Street,
New York, NY 10001, USA.

Contact: Mr. Michael Sheppard
Telephone: (212) 691 1910
Telex: 423571

West Coast Distributor

Cine Mills Corporation,
3500 W. Magnolia Avenue,
Burbank, California 91505, USA.

Contact: Mr. Wally Mills
Telephone: (213) 843 4560
Telex: 9104982768

sachtler
HORIZON 7+7
a new fluid Head

featuring:

Sliding camera-platform to compensate for center of gravity displacements,

4-step dynamic counterbalancing system, adjustable for your 16 mm studio or handy 35 mm camera,

7-step dial in drag control for pan+tilt,

independent, positive locks for pan+tilt
plus safety lock for keeping the camera in a horizontal position.

Sachtler touch+go quick release system to ease handling of your camera on a Sachtler or on your shoulder,

to come with a tripod stable enough even for your longest focal length,

the all in one piece unit — fluid head, tripod and triangle — in one container.

A cameraman's supporting system.

Ready to support your camera too.

Contact your nearest Sachtler dealer or write to:

Sachtler Corporation of America
400 Oser Avenue, Hauppauge NY 11788
Phone (516) 2 31 00 33, Tlx 1 40107,
TWX 510 221 1884

a subsidiary of
Sachtler GmbH, Dieselstr. 16,
D-8046 Garching/München, West Germany
Phone (89) 3 20 40 41, Telex 5 215 340

WHAT'S NEW

IN PRODUCTS, SERVICES AND LITERATURE

COMPONENT VIDEOTAPE RECORDER SHOWN AT N.A.B. CONVENTION

IVC of Sunnyvale, Calif. unveiled at the N.A.B. Convention a component tape recorder (CTR) jointly developed with Cezar International, Ltd., also a Sunnyvale based corporation.

The IVC-1 CTR is believed to be the first one-inch reel-to-reel magnetic tape recorder capable of storing the RGB components produced by any video camera or RGB generating device.

The primary application of the IVC-1 CTR is aimed at film and television production/postproduction.

The IVC-1 CTR permits independent processing of the visual and aural components of film and television material. The ability to do computer controlled scene-by-scene color correction ("painting" ultimately fulfills the long recognized necessity of laboratory treatment of visual imagery. Standard system configurations for the IVC-1 CTR are RGB input and fully time base corrected RGB output at 24, 25, or 30 frames per second scan rates as ordered in a self-contained transportable console.

Optional accessories include: NTSC, PAL, PAL-M, on Secam output encoders.

Also available are computer-controlled color painting, insert editing and F-M dubbing.

Base price of the IVC-1 CTR is $29,500 and it is available for delivery July 1, 1982.

For more information, contact John C. Frieberg, at (408) 738-3900.

•

CINESCAN FAST-TALKING PREVIEWER

Research Technology International has introduced a compact table-top previewer less than three feet wide with an optional speech processing capability. With 48 square inches of viewing area and a dual speaker system, the unit features easy one-hand threading and simplified controls which the company estimates can cut viewing time in half.

The optional Quik-Trac speech processor module allows the operator to check sound films at twice sound speed and still understand every word clearly. CINESCAN can also be operated at locked-in sound speed or in a variable speed edit mode at up to 350 feet per minute. An optional electronic digital counter will display time or footage in a large bright LED readout. The 16-sided crown glass prism system assures sharp pictures and virtually eliminates image flicker. It accepts up to 2200 foot reels, there is a headphone jack, and the film transport is servo-controlled for gentle film handling.

For further information contact Research Technology International, 4700 Chase Avenue, Lincolnwood, IL 60646 (312) 677-3000 or (800) 323-7520.

•

INTELENS INTRODUCED BY ANIMATION VIDEO INCORPORATES MICROCOMPUTER

Animation Video, a manufacturer of broadcast-quality video animation equipment, is introducing the InteLens™ to the AniVid product line.

The InteLens™ is an "intelligent lens," incorporating a microcomputer for control of the zoom and iris functions. Front panel controls on the lens allow manual control of the zoom from 1.5 field to 16 field in 1/100th field increments. Motion may be step-at-a-time or continuous at a variable zoom rate. The iris can be set to any value from f3.2 to fully closed in steps of 1/400th of the total range.

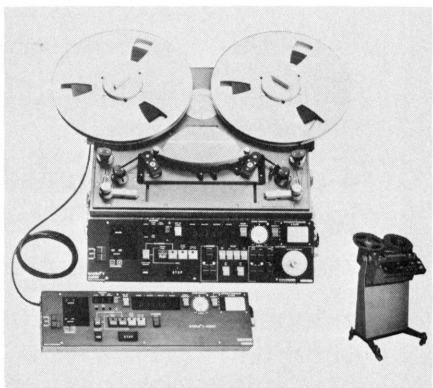
The InteLens™ incorporates an RS-232 port for programming fully automatic moves using an external programming device. The AniVid Controller is the usual programming console, but any computer with an RS-232 port may be programmed to control the InteLens™.

Programmed moves may be performed in real time or broken up into segments for execution one step at a time during frame-by-frame animation. Real time moves are useful for animatics sequences, or for previewing frame-at-a-time moves.

Animation Video, a division of Convergence Corporation, manufactures the AniVid System for producing broadcast-quality, frame-by-frame animation direct to video tape. All the techniques available to the film animator can be implemented on the AniVid System.

A complete AniVid System consists of an animation stand and compound, a three-tube color video camera with InteLens™, and a microprocessor-based VTR Controller with an interface to an unmodified customer-supplied 1-inch or ¾-inch VTR. For more information: 1315-B East St. Andrews Place, Santa Ana, California 92705 (714) 545-0244

•



NAGRA INTRODUCES T-AUDIO STUDIO AND REMOTE RECORDER

A new, twin-capstan, four-speed tape recording instrument, developed by the Nagra-Kudelski Group of Switzerland for studio or remote use, is now being marketed in the U.S. by Nagra Magnetic Recorders, Inc. of New York and Hollywood.

Offered in 2-track and stereo versions, the newly designed high performance recorder features a detachable, individually controlled keyboard for fully operational remote capabilities. It provides keyboard selection of up to four recording calibrations for speed, tape type and standard. The unit also features an interchangeable head assembly and is capable of high speed copying as a result of its 10 m/sec spooling characteristics. It also provides Servo-Controlled editing plus a built-in cutter; Servo-Controlled tape transport with interhead tension sensing; variable playback speed control; and an electronic counter with digital display. The T-audio functions on AC or DC—including a 12 or 18 Volt car or van battery.

Other important features of this 'Swiss Quality' recorder include: Matrix Display for 'Record' and 'Output' modes and a bright, Warning Display for Power, Phase-Lock and Tape Tension.

For further information: Mr. Tom Daniels, Nagra Magnetic Recorders, 19 West 44th St. Room 715, New York, N.Y. 10036, (212) 840-0999. ■

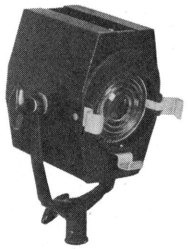
LET THERE BE LIGHT

lighting that doesn't limit your creativity.

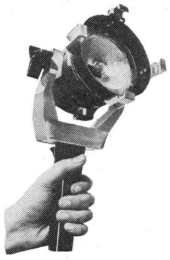
The best lighting directors and cinematographers for film or video agree that the old axiom "If one is good then two are better" doesn't necessarily hold true in lighting. You need the right light for the right job.

There are so many different lights and lighting manufacturers that picking that right light can sometimes be confusing. We don't want to add to your confusion, but here are a few new lights we think you should know about.

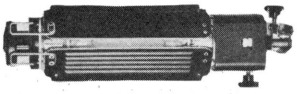
◀ MINI COOL
A compact, lightweight fixture ideal for portable applications. Special design eliminates 90% of the radiant heat. Battery or AC powered.



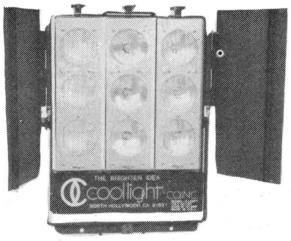
ULTRA MINI SPOT
Fresnel lens allows focusing with an even field. One of many economically priced units from Ultra Light.



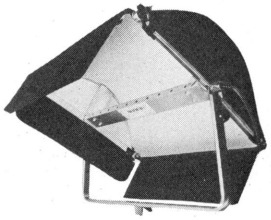
COLORTRAN MINI-PRO
Lightweight. Focusable. Rugged. Dependability and versatility has made this light the standard in news photography. Operable on battery or AC.



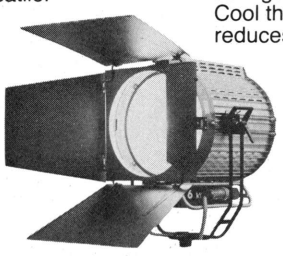
LOWEL TOTA-LIGHT
Exceptionally compact for storage. Extraordinarily wide angle yet efficient illumination. Multiple accessories make it extremely versatile.



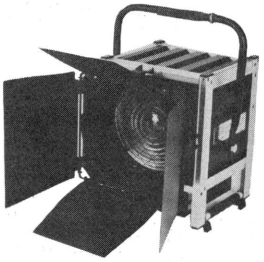
COOLLIGHT TRILITE
A nine light with 3 removable light banks each containing3 lamps enabling the fixture to be attached in 3, 6 or 9 light configurations. Like the Mini Cool the Trilite substantially reduces radiant heat.



LOWEL SOFTLIGHT
Utilizes highly-reflective, heat-absorbant fabric reflector shell. Perfect for compact storage on location.



ARRIFLEX HMI
Provides 2½ times the illumination of tungsten units with the same power consumption. The perfect daylight booster source. Ribbed duraluminum construction makes the Arriflex HMI series extremely rugged. In addition to standard 575W, 1200W, 2500W and 4000W, a 200W battery powered HMI is also available.



CINEMA PRODUCTS RDS HMI
These HMI's are convertible to tungsten and are constructed for storage stacking. Both the 575W and 1200W draw less than 15 amps. An outstanding daylight source, economically priced.

The experts at ALAN GORDON ENTERPRISES, INC. are here to eliminate your confusion. We stock these lights and many more. Write or call us with your specific applications and we will do our best to make sure you get the right light for the right job . . . and then, *let there be light.*

COPYRIGHT © 1982
ALAN GORDON ENTERPRISES INC.

alan gordon enterprises inc.

1430 Cahuenga Blvd., Hollywood, CA 90028
Address Correspondence to P.O. Box 315, Hollywood, CA 90028
Telephone: (213) 466-3561 • (213) 985-5500
TWX: 910-321-4526 • Cable: GORDENT

In the Mountain States

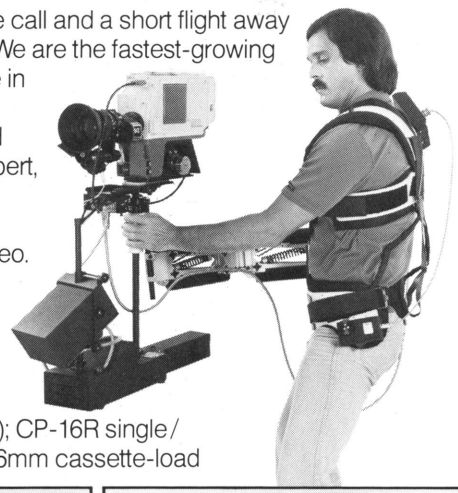
We are your single-point source for all Cinema Products equipment:

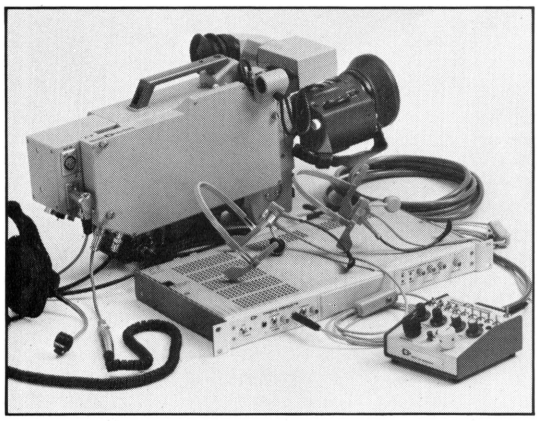
Film & Video

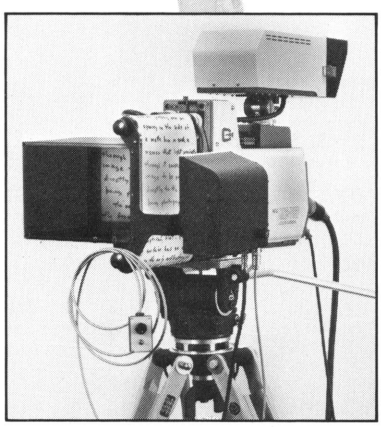
Right in the heart of Denver. Only a phone call and a short flight away from just about anywhere in the country. We are the fastest-growing full service professional equipment house in the Mountain States. With outstanding camera repair/maintenance facilities and optical service department. Staffed by expert, factory-trained technicians.

And we are the exclusive dealer for all Cinema Products equipment: film *and* video.

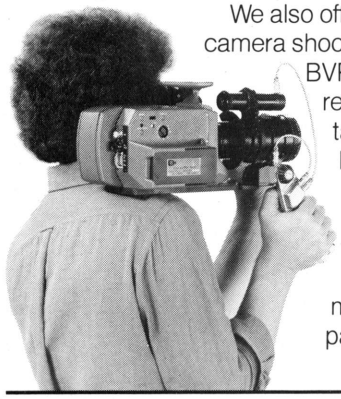
For example: the Oscar-winning Steadicam® camera stabilizing system; Camraprompter; U/F-16 and U/F-35 film editing consoles; Co-Ax digital remote control systems for ENG/EFP cameras (from distances up to 5000 feet!); CP-16R single/double system sound cameras; GSMO 16mm cassette-load







cameras (available with both 400′ and ultra-compact 100′ magazines) . . . You name it, we've got it. For sale or for rental.



We also offer special video rental packages for single/multiple camera shoots, featuring the CP Co-Ax system for use with Sony BVP-250, 300 and/or 330 video cameras (available for rental with or without Sony cameras), 3/4″ and 1″ portable VTRs, RDS/HMI lights, and support equipment. Plus a complete line of accessories, lenses, and Portable Energy power supplies to take care of all your production needs.

So when you plan your next shoot—film or video—give us a call and check us out first. Find out what *we* mean by "service," and why we are proud to make it part of our name!

Film/Video Equipment Service Co.

Rental • Sales • Service

1875 South Pearl Street
Denver, Colorado 80210
(303) 778-8616

THE BOOKSHELF

By GEORGE L. GEORGE

STYLES AND GENRES

The remarkable revival of the Australian cinema is noted in David Stratton's detailed and informative THE LAST NEW WAVE. It discusses the odds facing production for a small domestic market and the striving for international distribution that motivates creative and resourceful Australian filmmakers (Ungar $19.95).

In BRAZILIAN CINEMA, Randal Johnson and Robert Stam offer a broad historic and critical survey of the local film industry and the dynamism and vitality of Cinema Novo directors—Glauber Rocha, Nelson Pereira dos Santos and others—in breaking new esthetic grounds in an exuberant cinematic tradition (Fairleigh Dickinson U. Press $35).

A highly innovative period of Germany's film history is evoked in a fascinating collection of 125 photographs compiled by John Kobal, GREAT STILLS OF THE GERMAN SILENT ERA, including samples from *Caligari, Metropolis, The Last Laugh* and *Nosferatu* (Dover $7.95).

Blatant machismo in movies, on screen and off, is explored in THE SUPERSTUDS by Howard Elson in his candid appraisals of Errol Flynn, Clark Gable, Ryan O'Neil, Burt Reynolds and fellow male sex objects (Proteus $7.95). In MONSTERS, Vincent Price and his son V.B. survey the awesome array of demonic creatures and their film impersonators (Grosset & Dunlap $12.95).

In THE LETTERS OF NUNNALLY JOHNSON, the lively correspondence between the respected writer/director/producer and leading show business personalities scintillates with wit, gossip and sophisticated observations. His uninhibited puncturing of Hollywood's social pretensions and unseemly behavior is always on target, as are his personal charm and literate manner (Knopf $16.50).

THE DIRECTORIAL TOUCH

Otto Preminger's personality is the real subject of Theodore Gershuny's SOON TO BE A MAJOR MOTION PICTURE. This is a vivid report of the production of *Rosebud,* a chaotic and frenzied example of how movies are often made—and how they shouldn't be (Holt Rinehart Winston $14.95/8.95).

An innovative director with personal concepts of a total cinematic universe is studied in KUBRICK, a discerning assessment by Thomas Allen Nelson of the filmmaker's stylistic approach to story-telling and his creative use of visual and aural imagery (Indiana U. Press $37.50/9.95).

In POLANSKI, Barbara Leaming traces with sharp insight a portrait of "The Director As Voyeur," stressing his concern with sadism, sexual impulses and covert looks at intimate situations in this hard-hitting evaluation of the violence that conditioned his own life-story (Simon Schuster $15.50).

A director's work methods, his assessment of his peers and his performers, his advice to aspiring filmmakers are discussed in HAWKS ON HAWKS, a montage of inquisitive interviews that Joseph McBride conducted with the versatile and consistently successful director (U. of California Press $14.95).

A "neoformalist" study by Kristin Thompson of EISENSTEIN'S IVAN THE TERRIBLE assays the narrative and visual patterns of the Soviet director's classical film, recasting familiar notions of form and style in terms of Eisenstein's unconventional and complex structures (Princeton U. Press $32/12.50).

In VIETNAM ON FILM, Gilbert Adair incisively analyzes 70 feature films whose directors interpreted the nation's most disastrous war, from John Wayne/Ray Kellogg's gung-ho *The Green Berets* to Francis Coppola's epic *Apocalypse Now,* in a variety of approaches reflecting the public's changing moods (Proteus $13.95).

An informative and entertaining biography, Ed Naha's THE FILMS OF ROGER CORMAN quotes at length the director/producer—and mostly showman—as he assesses candidly his pragmatic methods in combining tight budgets with respectable cinematic creativity (Arco $14.95).

Unraveling in ALAN ALDA the multi-layered personality of perhaps the most successful actor/director today, Jason Bonderoff offers a perceptive survey of Alda's life and career, and his strong family bonds (Signet/NAL $2.75).

We wish to correct the misspelling, in our April issue, of the name of Frederick Lamster, author of a fine appraisal of Frank Borzage's films and career, SOULS MADE GREAT THROUGH LOVE AND ADVERSITY (Scarecrow $21.50).

FACETS OF CINEMA

Following effectively the course of film's development from its beginnings through the 1970s, David Robinson's THE HISTORY OF WORLD CINEMA, in its revised and updated edition, offers a fluent and comprehensive account of the successive mutations of this complex art. Robinson's articulate views, his readable style and his considerable scholarship stamp this book as a reliable and literate reference source (Stein & Day $25).

An eloquent critique of Hollywood's traditional perception of Southern life and customs, THE CELLULOID SOUTH by Edward D.C. Campbell, Jr. challenges what he views as the unrealistic and seemingly harmless characterizations of a planter society with its overtones of slavery abetting the South's socially regressive policies (U. of Tennessee Press $17.50).

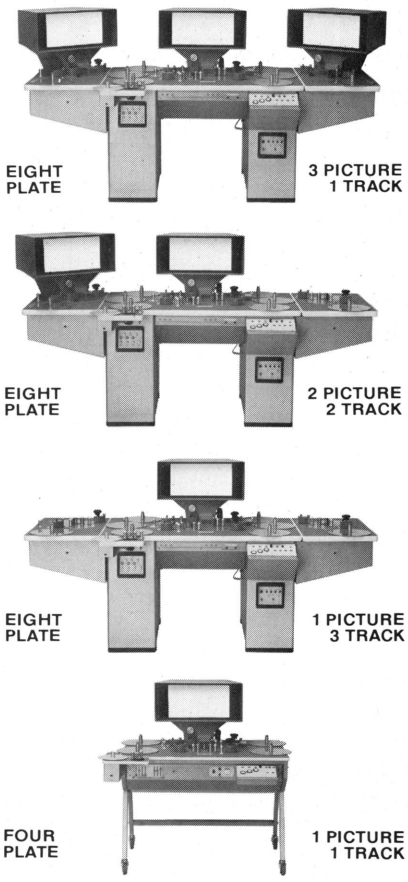
Pearls culled from the collective wits of Groucho Marx, W.C. Fields, Dorothy Parker, Oscar Levant, Tallulah Bankhead and others are strung together in WITH MALICE TOWARD ALL, Dorothy Herrmann's dazzling necklace of humorous gems and wicked repartees (Putnam $14.95).

Television's "golden age," during which video evolved its own style, distinct from its movie dependency, is discussed by the well-known columnist Martin Williams of the Village Voice in TV: THE CASUAL ART. His unorthodox but stimulating views offer sensible touchstones as to what was then "trash, high-grade trash, and art." (Oxford U. Press $15.95).

Esthetic and societal aspects of cinema are explored in two unconventional and challenging studies. In APPARATUS, an anthology edited by Theresa Hak Kyung Cha, noted scholars and filmmakers identify the individual components of the interdependent whole comprising the film, its author and the spectator (Tanam Press, 40 White St., NYC 10013; $19.95/9.95). In QUESTIONS OF CINEMA, Steven Heath enlists psychoanalysis, semiotics and Marxism in his consideration of meaningful elements in a general theory of film (Indiana U. Press $22.50/9.95).

A useful guide for perplexed video viewers confronted with a plethora of films old and new, the 1982-83 edition of Steven H. Scheuer's MOVIES ON TV lists over 11,000 features, with capsule plots, production data and knowledgeable ratings (Bantam $3.95). ■

KEM
Universal



The ultimate in versatility.

The KEM Universal is interchangeable, *in seconds*, from Picture to Sound, and vice versa. Plug-in modules—no tools. Switchable aspect ratios: Anamorphic, 1.85:1, Academy—even 16mm.

The KEM Universal has become the standard in 35mm horizontal editing. It's the ultimate in versatility. And it's the most magnificently built editing machine in the world. You get what you pay for.

EAST OF THE ROCKIES:
MM Editing Systems Inc.
118 East 25th Street, 7th Floor, New York, New York 10010. (212) 460-8810
WEST COAST AND TEXAS:
KEM Editing Systems Inc.
7237 Santa Monica Blvd., Hollywood California 90046 □ (213) 850-0200

KEM

CINEMA WORKSHOP

By ANTON WILSON

MICROWAVE LINKS

The one-piece camera/recorder will soon be on the market. RCA, Panasonic, Sony, Ikegami, Hitachi and Bosch all displayed video cameras with integral VTR's at the recent NAB Convention. Introduction of these models should begin this summer, but it could be up to a year before all the aforementioned brands are delivered. These one-piece units certainly facilitate modern film-style techniques. They are a particular advantage to news and documentary production where speed and portability are paramount. However, one of the major applications of video is the single or multiple camera technique of covering live events. In these cases the one-piece camera recorder is useless. The conventional method for live coverage usually entails prolific use of cables; multiconductor cables, co-ax cables, audio cables, intercom cables, etc. This use of cables to connect the cameras to the base station is quite a headache, to say the least. The problem becomes even more acute when covering large outdoor events, such as golf tournaments or Olympic games where remote cameras can be up to a mile away.

Several means have been developed to cope with these problems. Tri-ax and encoded co-ax systems multiplex all camera control signals and genlock, as well as video output, audio, and intercom onto a single cable. A more recent development make use of a single tiny fibre-optics cable. While these systems greatly simplify remote camera operation, it is still inconvenient and time consuming to lay several thousand feet of cable, no matter how thin or light it may be.

There is a method which eliminates the cable altogether. By employing a microwave transmitter, a remote camera can easily beam its video signal back to a base station. This method is quite popular with live coverage news teams. The camera is usually linked by cable to a van which then transmits the signal to the station or to a repeater. Most of these systems, however, have several shortcomings. Firstly, the camera is still linked to the van with cable; and secondly, most of these systems do not provide the base station with complete control over the camera which is required for high quality multiple camera production.

These problems have been eliminated in the new Ikegami ML-83 microwave link. This system is designed to be used with the Ikegami HL-83 camera. Pictured in FIGURE 1, the microwave transmitter and control receiver slides onto the special bracket on the side of the HL-83 camera. The camera thus becomes a single one-piece unit weighing about 26 pounds, complete with battery and no wires or cables.

The Ikegami ML-83 has many innovative features. The cylindrical protrusion at the rear of the unit is a special automatic steering microwave transmission antenna. This antenna automatically beams the video signal in the direction of the base station, even when the camera is rotated a complete 360°. This allows the cameraman complete mobility and produces a sharp transmitted image free of multi-path ghosts.

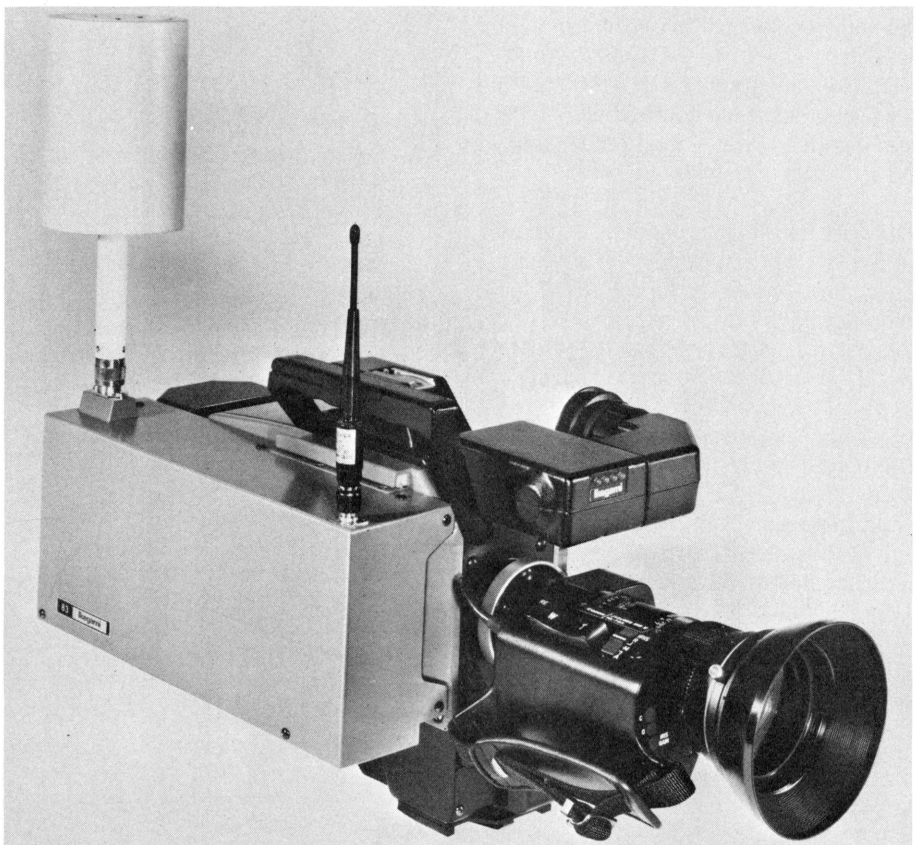
The small antenna at the front of the transmitter receives the control signal from the base station. The base station can control genlock, Iris, Master Black level, R/B gain, R/B H cent, R/B V cent, R/B black level, bars on/off, Auto Iris on/off, white Bal on/off, Call, tally, and intercom.

The system has a range of up to 1,500 meters, which is almost one mile. In operation the system is quite flexible. The base station can be separated from its antenna dish by up to 200 meters of co-ax cable. When desired, the transmitter may be separated from the camera. In this mode of operation, the transmitter can be put in a fixed spot, leaving the lightweight camera free to move at the end of a multiconductor cable that can extend up to 100 meters. The base station dish covers an area of 120°, allowing the cameraman to roam almost without restriction.

As mentioned before, within this area

Continued on Page 616

FIGURE 1 — New Ikegami HL-83 camera with ML-83 microwave transmitter/control receiver. The cylindrical microwave antenna automatically steers itself to always point back at the base station receiving dish, allowing the cameraman complete freedom to roam at will and turn in any direction. The ML-83 not only sends video and audio back to base station, but also receives control commands and intercom.



Merl Dobry takes off again...

with Cinema Products custom-designed camera mount and GSMO.

Hit head-on by the landing gear of a fast-descending stunt plane he was filming, Merl Dobry got knocked off his camera car. Regaining consciousness three and a half weeks later, the famous aerial cinematographer, sky-diver, underwater and stunt cameraman found himself with his right shoulder and arm shattered with some 20-odd compound fractures and major damage to arteries and nerves.

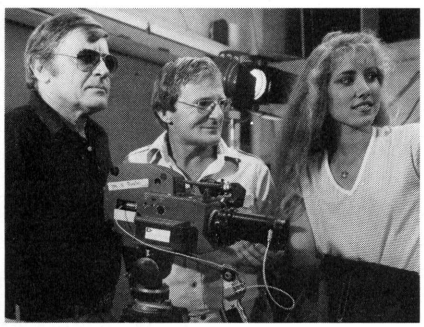
Undaunted by the near-fatal crash, three years of reconstructive surgery and physical rehabilitation—and despite the resultant permanent paralysis in his right shoulder and arm—Dobry was determined to use his reborn skills and get back into production.

"My main problem, though, was how to use standard camera equipment which is basically designed for two-handed operation," says Dobry, whose production company is based in Santa Barbara, California. "Enter Cinema Products and GSMO.

"GSMO, of course, was the obvious choice. Not only is it the most lightweight professional 16mm production camera around, it also features crystal-controlled variable speeds from 12–64 fps (including an optional 30 fps speed), integral auto slating and pilotone outputs, and a choice of quick-change cassette-load magazines—the standard 400′ magazine as well as the new, low-profile, ultra-lightweight 100′ magazine. A most versatile 16mm production camera for a wide range of applications. In short, just what the doctor ordered.

"Moreover, Cinema Products' outstanding engineering team was willing to go the extra mile on my behalf. Constructing a custom-designed GSMO mount (patterned after the Steadicam® operator's vest), with J-5 handgrip power zoom and camera start/stop control adjustable for convenient left-handed operation. Comfortable and functional to the last detail. In case of emergency, I just pull on the rip cord . . . and I'm free of camera and mount in seconds!

"Thanks to Cinema Products, sporting my best 'designer suit' and GSMO, I'm back in the swing again. Working on commercials and documentaries. Flying and filming again."

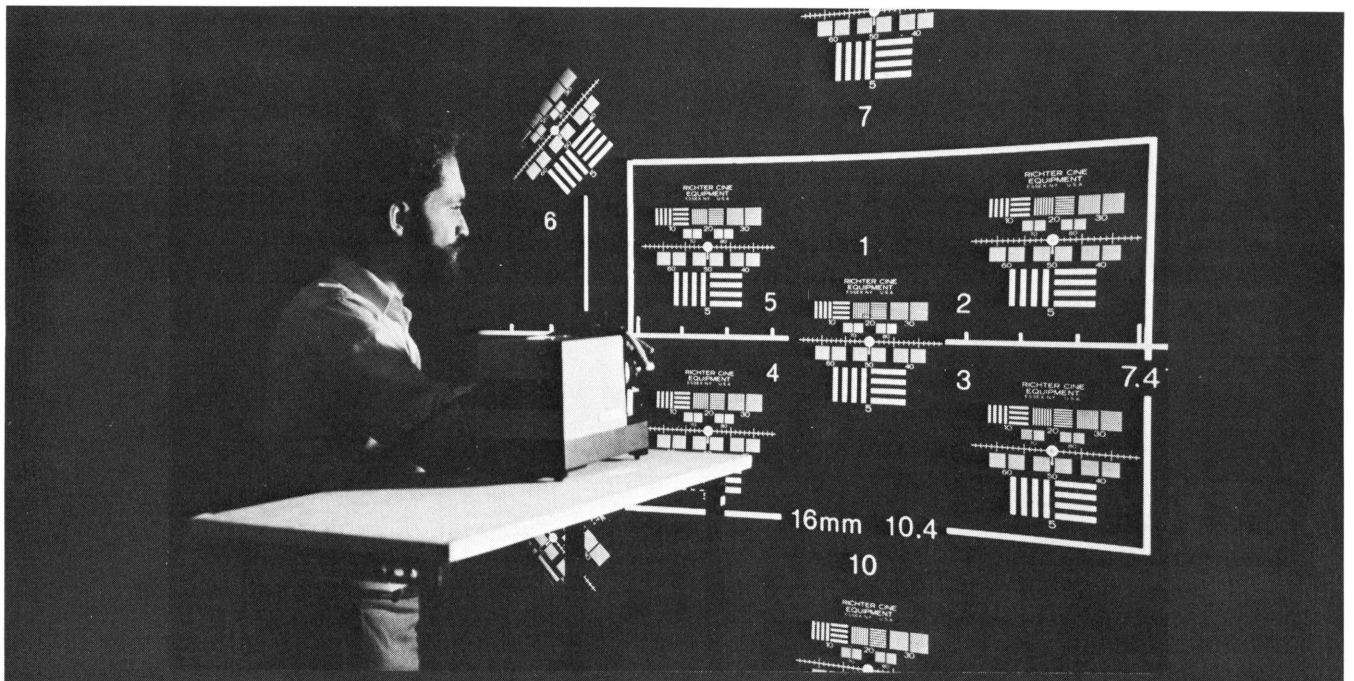


Merl Dobry (center) lines up the next shot for a Weinmann ski boots commercial, produced for the Robert Hammond agency (Santa Barbara), as creative director Bob Hammond and model look on.

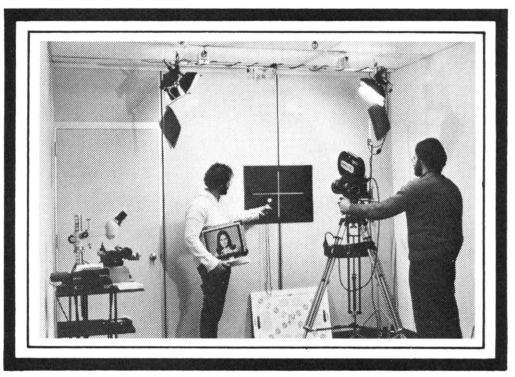
cinema products CORPORATION

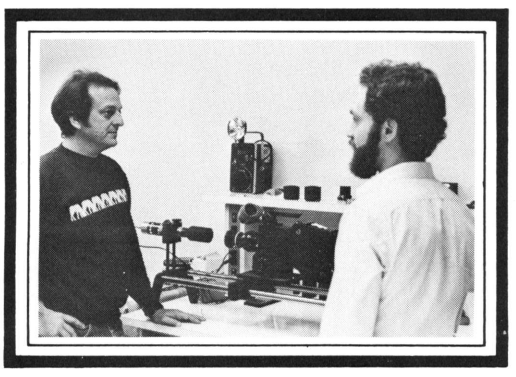
Technology In The Service Of Creativity

2037 Granville Avenue, Los Angeles, California 90025
Telephone: (213) 478-0711 • (213) 477-1971 • Telex: 69-1339



Why be in the dark with your lenses?





Du Art's *FREE* **Camera and Lens Evaluation Service** makes available to the cinematographer a **Lens Test Projector.** Coverage, resolution, and uncorrected aberration are instantly defined. No more inconclusive film tests—**what you see is what you get.**

What's more, our unique testing facility provides an auto collimator for detailed focal plane examination and lighting for focus and registration charts, (you supply the raw stock we will process free).

Call David Leitner at (212) PL7-4580 to set up an appointment for your camera and lens evaluation. He'll be happy to spend time with you analyzing the results.

Call or write for a free copy of our "CINEMATOGRAPHER'S LABORATORY GUIDE" explaining our camera and lens evaluation and other services for the cinematographer.

DU ART FILM LABORATORIES, INC.
245 West 55th Street, New York, N.Y. 10019 (212) PL7-4580

Farewell . . . but not "Goodbye"

This issue of *AMERICAN CINEMATOGRAPHER* marks the last time my name will appear on the masthead as its Editor. After having produced almost 200 issues of the publication, I have resigned its editorship, effective with the "putting to bed" of this issue.

It is a change that is long overdue, when one considers that when I, somewhat reluctantly, assumed the position in January, 1966, my background was strictly that of motion picture writer/producer/director. I had no desire to go off on a tangent and become a journalist, but the publication was in trouble at the time—and so, at the urging of the late Arthur Miller, ASC and the late Walter Strenge, ASC, both good friends, I agreed to take on the job temporarily, "but only until you find a real Editor."

Well, they never *did* find a real Editor, so I hung in there and did my best to give the readers what they wanted to read. My judgment was based on what I, as a film-maker, might find valuable in aiding me to make technically and artistically better films. Between then and now the world's greatest cinematographers, directors, producers, writers, editors and special effects experts have graciously and unselfishly shared their expertise with *AMERICAN CINEMATOGRAPHER* readers in (currently) 188 countries.

During the same period I traveled to many of those countries in pursuit of first-hand coverage of worthy film projects to write about in the publication, or to attend international technical conferences. Almost everywhere I went I encountered readers who, oddly enough, would use the same phrase in describing *AMERICAN CINEMATOGRAPHER.* "It's our Bible!" they would tell me, in country after country.

During that same period the publication's circulation tripled—*without any overt effort to boost circulation.*

And so, in the tradition of my British forebears, I seem to have "muddled through" and it's gratifying to realize now, at the end of this labor, that I must have been doing something right.

I feel a bit sad in leaving the publication on which I have lavished my blood, sweat and tears for so long a time—but I am excited at the prospect of returning to active film production, which is my first and truest love, professionally speaking. Hopefully, I shall also be able to spend a bit more time at my home at beautiful Lake Tahoe.

But while my name will no longer appear as Editor on the magazine, it may very well crop up in a by-line from time to time. I have been asked to continue as a contributor of feature articles to the publication and, if my other activities permit, I shall be happy to do so.

AMERICAN CINEMATOGRAPHER, beginning with the March, 1982 issue, has assumed a new and potentially exciting direction in reaching out to embrace video in a melding of the film and electronic media. Beginning with the next (July, 1982) issue, Video Editor Richard Patterson will move up to the Editorship and I know he will give it his all-out effort, just as I have tried to do in the past. I wish him all the best.

During my years as Editor I have been fortunate enough to form many close friendships with film people throughout the world—and I shall cherish the warmth of those friendships always.

I wish also to take this opportunity to thank all of you out there—readers, advertisers and colleagues—whose cooperation, kindness and confidence in me have made the long nights of work and the endless deadlines throughout the years worthwhile.

Farewell . . . but not "Goodbye" . . .

Cinematically,
HERB A. LIGHTMAN

AMERICAN SOCIETY OF CINEMATOGRAPHERS

ROSTER ★ JUNE, 1982

Officers—1982

Harry Wolf, President
Stanley Cortez, 1st Vice President
Milton R. Krasner, 2nd Vice President
Leonard J. South, 3rd Vice President
George J. Folsey, Secretary
Linwood G. Dunn, Treasurer
Daniel L. Fapp, Sergeant-at-Arms

Members of the Board

L.B. Abbott
Joseph Biroc
William Fraker
Philip Lathrop
Ernest Laszlo
Lester Shorr
Ted Voigtlander
Ralph Woolsey
Al Keller

Alternates

Howard A. Anderson, Jr.
Charles G. Clarke
Henry Freulich
Gene Polito
Sam Leavitt

Active Members

Lloyd Ahern
Nestor Almendros
Herbert Alpert
John A. Alonzo
Murray Alvey
Gert J. Andersen
Arthur Arling
Monroe Askins
Charles Austin
Lucien Ballard
Frank Beascoechea
Manuel J. Berenguer
Andres Berenguer
Carl Berger
Donald Birnkrant
Ralph Bode
Haskell Boggs
Lamar Boren
Edward R. Brown
Joseph Brun
Stephen H. Burum
Wilmer C. Butler
Taylor Byars
Ernesto Caparros
Robert Caramico
Frank Carson
S.C. Chuck
George T. Clemens
William T. Cline
William Clothier
Ben Colman
Edward Colman
Olle Comstedt
Jack Couffer
Vincent G. Cox
James Crabe
William Cronjager
Floyd D. Crosby
Art Cruickshank
Russell Cully
Mark H. Davis
Drummond Drury
Victor Duncan
Bert Dunk
Alric Edens
Richard Edlund
John Elsenbach
Russell Ervin
Gerald Finnerman
A.C. Francis
Ellsworth Fredricks
Frederick Gately
Maury Gertsman
H. Edmund Gibson
Donald C. Glouner
Richard C. Glouner
Burnett Guffey
Robert G. Hager
Conrad Hall
Robert Hauser
John L. Herrmann
Sid Hickox
Gerald Hirschfeld
Robert Hoag
Seymour Hoffberg
Adam Holender
Eric Horvitch
Michel Hugo
Andrew Jackson
Robert C. Jessup
Torben Johnke
William K. Jurgensen
Richard A. Kelley
W. Wallace Kelley
Victor Kemper
Glenn Kershner
Jess Kizis
Richard Kline
Fred J. Koenekamp
H.F. Koenekamp
Laszlo Kovacs
Ken Lamkin
Charles B. Lang
Vilis Lapenieks
Joseph W. LaShelle
Andrew Laszlo
Matthew Leonetti
Paul K. Lerpae
James F. Liles
Glen MacWilliams
Don Malkames
Karl Malkames
Isidore Mankofsky
Fred Mandl
Michael D. Margulies
William Margulies
Jacques Marquette
Enzo A. Martinelli
John McPherson
Terry K. Meade
David Millin
Richard Moore
Robert C. Moreno
Donald Morgan
Brianne Murphy
Sol Negrin
Meredith M. Nicholson
John M. Nickolaus
Sven Nykvist
Emil Oster
Louis Page
Kenneth Peach
Harry Perry
Alex Phillips
Frank Phillips
Clifford Poland
Jack Priestley
Earl Rath
Richard L. Rawlings
Gayne Rescher
Jack L. Richards
Owen Roizman
Charles Rosher, Jr.
Harold Rosson
Giuseppe Rotunno
Joseph Ruttenberg
Robert Sable
Ted Saizis
Vincent Saizis
Howard Schwartz
James Seeley
Richard Shore
Clarence W.D. Slifer
Harkness Smith
Edward J. Snyder
William E. Snyder
William Spencer
Frank Stanley
Clifford Stine
Harry Stradling, Jr.
Robert L. Surtees
Jack Swain
Ellis Thackery
Mario Tosi
Thomas E. Tutwiler
Zoli Vidor
Joseph Walker
Harry Walsh
John F. Warren
Harold E. Wellman
Frederick E. West
Joseph Westheimer
Albert Wetzel
Haskell Wexler
Charles F. Wheeler
Gordon Willis
Jack Woolf
Lothrop Worth
Vilmos Zsigmond

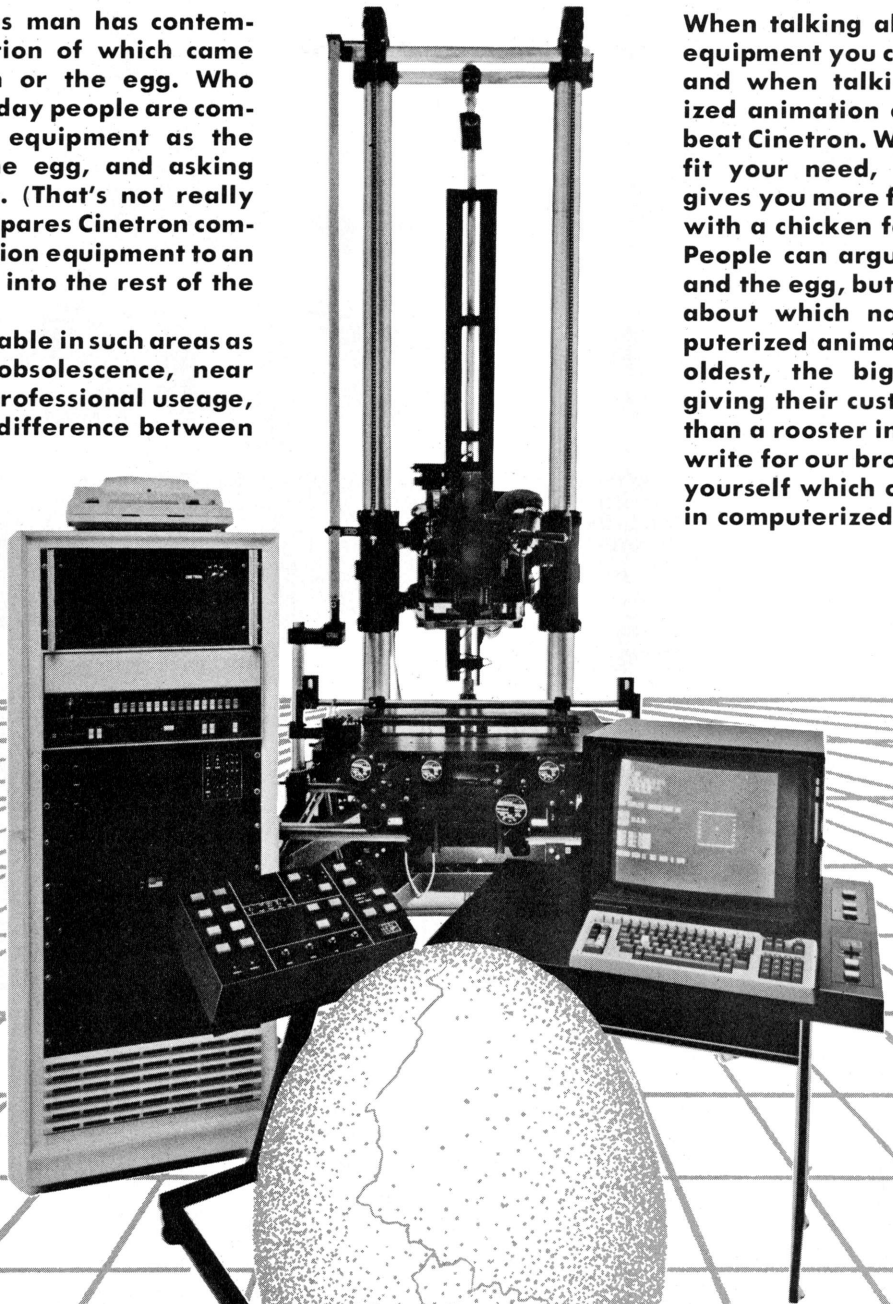
Associate Members

Mark Armistead
Volker Bahnemann
Bernard Barron
Emerson R. Barlow
Howard Bell
William A. Bickford
James Branch
Gerald D. Brodersen
Anthony D. Bruno
Robert Burns
Leo Chaloukian
Claude Chevereau
Leonard F. Coleman
Michael Crane
Robert B. Creamer
Fred H. Detmers
Richard DiBona
Edmund M. Di Giulio
Elias J. Drexler
William W. Edwards
Walter G. Eggers
Tom Ellington
Blake Fendrich
Ted Fogelman
Milton Forman
Irwin B. Freedman
Raymond Gaul
Richard B. Glickman
Dennis F. Godfrey
Robert Gottschalk
William Hansard
R. Bruce Hill
Julian D. Hopkinson
G. Carleton Hunt
Fred Hynes
Masaru Jibiki
John Jurgens
Robert E. Klees
Donald Kloepfel
John J. Kowalak
Robert Kreiman
Joseph R. Lee
Bern Levy
Herb A. Lightman
Grant Loucks
Lewis Mansfield
James F. Martin
Kenneth M. Mason
Robert McMillian
Stan Miller
Burt W. Mills
Walter H. Mills
George Milton
George J. Mitchell
Mickel Niehenke
Kemp Niver
Fred Nolting
Capt. Don Norwood
Otto Paoloni
Larry Parker
Warren Parker
John Pistor
Carl Porcello
Edward H. Reichard
John L. Robertson
Roderick T. Ryan
Loren Ryder
David Samuelson
Sydney Samuelson
Dan Sandberg
James Sater
Mel Sawelson
Fred J. Scobey
Peter Silverman
Leonard Sokolow
Burton Stone
Abbott Sydney
Harry Teitelbaum
Nat Tiffen
Richard Vetter
Lou Vincent
Frank Vogelsang
Jack Webb
E.M. Whiting, Jr.
Albert J. Whitlock
Allan L. Williams
Michael Zois

the industry or...

Through the ages man has contemplated the question of which came first the chicken or the egg. Who cares? And yet today people are comparing Cinetron equipment as the ultimate, like the egg, and asking which came first. (That's not really true, nobody compares Cinetron computerized animation equipment to an egg, but it leads into the rest of the copy.)

Although comparable in such areas as versatility, non-obsolescence, near perfection, and professional useage, there is one big difference between Cinetron and the egg. Cinetron won an Academy Award for technology.



When talking about egg production equipment you can't beat the chicken and when talking about computerized animation equipment you can't beat Cinetron. With a model priced to fit your need, Cinetron equipment gives you more flexibility than a chef with a chicken farm.

People can argue about the chicken and the egg, but there's no argument about which name is first in computerized animation. . .Cinetron, the oldest, the biggest and the best, giving their customers more support than a rooster in a hen house. Call or write for our brochure and decide for yourself which came first and is first in computerized animation.

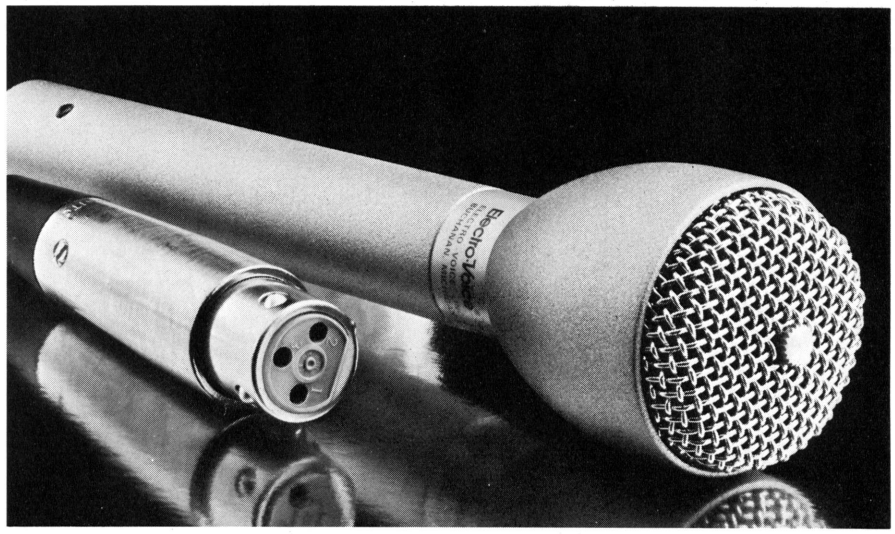
Cinetron

Computer Animation Equipment.

The best you can buy. Until we make something better.

Cinetron Computer Systems, Inc./6700 I-85 North/Norcross (Atlanta), Georgia 30093

Think of us as your mike expert.



The 635A – Perfect design from the start

The Electro-Voice 635A is probably the most widely used broadcast microphone currently available. Yet it was introduced back in 1967! There are microphone companies that haven't been around as long as the 635A! What makes a microphone continue to be the broadcasters' favorite after 15 years in the field?

The 635A was designed to be used anywhere. Its screw-machined steel case and mechanically nested parts set standards for durability and ruggedness that the competition still strives for. It was the first omnidirectional microphone designed to have a shaped, rather than flat, frequency response. A rolled off bass response combined with a slightly rising high end make it perfect for vocal reproduction. And it was the first microphone of its type to feature an elastomer encased head capsule for reduced handling noise and additional protection from severe mechanical shock.

Despite all the technological advances in the broadcast, recording and sound reinforcement industries, the 635A continues to be the "audio man's screwdriver" - a microphone tool that can be used anytime, anywhere, for almost anything. When a product is designed right to start with, there's no need for it to become obsolete. All Electro-Voice professional microphones are designed with the same goal in mind. That's why people think of Electro-Voice as their microphone expert.

Electro-Voice®
a gulton company

600 Cecil Street, Buchanan, Michigan 49107

In Canada:
Electro-Voice, Div. of Gulton Industries (Canada) Ltd.,
345 Herbert St., Gananoque, Ontario K7G 2V1.

"JAZZMAN" - A STUDENT FILM THAT'S MORE THAN A STUDENT FILM

Filmed in 35mm, with just about everything begged or borrowed, this picture was shot with sophisticated techniques of a professional film

JAZZ MAN is a student film that's more than a student film: It's also a good movie. Assembled with a rare combination of fresh perspective and keen technique, the film has a tone and texture usually associated with truly mature work.

Written and directed by Jeff Wishengrad and produced by Ron Diamond, the film is a 40-minute musical drama, utilizing all original music. The Director of Photography was Kristin Glover. The story finds Mel Grinker, a 55-year-old saxophone player who never made it in the music world, working at a tiny run-down amusement park as a mechanic, repairing rides. His confidence is renewed when young Russel is hired at the park. Russel's goals are set beyond ferris wheels and merry-go-rounds as his real dream is to be a music promoter ... with the help of Mel's talents. The mixture of greed and ambition with friendship and trust creates a warm, human story.

The cast includes veteran actors Hank Rolike as Mel, and Albert Henderson along with newcomers Brian Stevens (Russel) and Nanea Reeves. Also featured are Charles Prime, Gene Washington, and Billy Haddnott, all talented and colorful jazz musicians who have played with many big jazz bands, such as Count Basie and Duke Ellington, during their long careers. As with most student films, the entire cast and crew donated all of their time to the project without any compensation.

Pre-Production

Faced with a miniscule budget, a search for a tiny amusement park and producing all original music, Producers Ron Diamond and Jeff Wishengrad *had a great amount of work before even one foot of film could be exposed.*

In an era of super-parks like Magic Mountain, small neighborhood amusement parks have virtually disappeared. They struck a goldmine with Marshall Scottie's Playland Park in El Cajon. This 30-year-old park was a museum of beautifully aged kiddie-rides.

The performance of original music in JAZZ MAN brought consideration to not only the actual composing of the music, but the preparation of filming the musical sequences. David Izzard's jazz numbers and Randy Sterling's "Riding Time," a jazz influenced rock and roll number, added to the professional flavor of the film.

Since he had never played a saxophone, Hank Rolike practiced miming to the music weeks before the shoot. The songs were broken down in the preparation of playback tracks which enabled all the musicians to repeat the musical performance on film, lip-sync style.

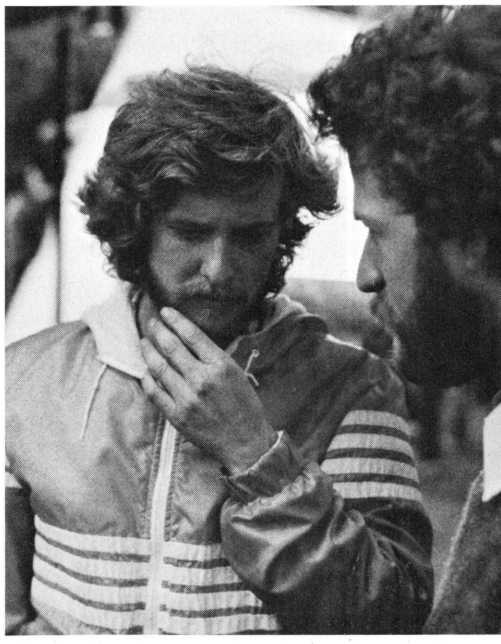
The decision to shoot in 35mm was contingent on one factor: donations. The budget did not allow for the purchase of 25,000 feet of new 5247 raw stock, so through perseverance and good old-fashioned abusive telephone tactics, the producers were able to get 95% of the film donated by more than a dozen Los Angeles production companies.

Working with short ends ranging from 200 feet to 900 feet, Director of Photography Kristen Glover shot a few feet from every roll to insure the film was not defective in any way. This proved to be a valuable step because there were a few rolls that had been fogged or somehow damaged before they were received.

It was also apparent that this film could not be shot over a few weekends or nights. Since the main location was a two-and-a-half hour drive from Los Angeles, the film had to be shot just like the grown-ups do: every day for three weeks with a few days off here and there for good behavior.

The weeks prior to shooting were taken up between location tests and filling all crew assignments. The key crew members were made up of mostly UCLA film students. Producer Ron Diamond and production manager Martha Elcan traveled to San Diego State University's Film and TV department, and with false promises of fame, fortune and fun for all, were able to recruit a large group of production assistants. Because there were many scenes that called for the park to appear to be open and filled with customers, Ron and Martha arranged for a local day care center to supply fresh busloads of fun-loving specimens from ages 3 to 8 and assorted teachers and parents during the days when background extras were required.

Another big money saver was food donations. Dozens of food wholesalers and



Director Jeff Wishengrad and producer Ron Diamond pondering weighty production problems. (BELOW) Director of Photography Kristen Glover taking a light reading on the set of JAZZMAN. Kristen, whose 35mm cinematography credits prior to JAZZMAN were non-existent, proved herself a very talented and capable Director of Photography.

local restaurants in the Los Angeles and San Diego areas gave enough food and drink to slash the original food budget by three-fourths. Assorted family members and friends also cooked meals in advance. It has been rumored that some of this food actually was nutritionally sound, although this topic was the subject of great controversy during the shoot.

Production

Shooting commenced October 13, 1980 at Marshall Scottie's in El Cajon. We could not have been more pleased with the choice of an Arri 35, BL. For the majority of scenes in the film, a warm, yet clean style was desired. Zeiss prime lenses were used because of their excellent critical focal characteristics. A zoom lens may have been more convenient, but the filmmakers wished to keep the image as crisp as possible, making the ruddy amusement park as gritty as possible.

Light coral filters were chosen to enhance the aged quality of the park.

To achieve the naturalistic style that the script called for, every daytime exterior shot was lit. The lighting crew used 5Ks, 9-lights and assorted Mickey, Mini- and Inki-Moles, along with a few large silks.

One of the most challenging sequences was the "Bumper Car Bop" scene. The bumper car ride is the setting for a nighttime jazz session. While Mel Grinker and his musician friends play, Russel and his date, Tracy, enjoy the bumper car ride. The bumper car ride, which has a very large flat surface, sits at the very end of the park, with the rest of the rides in the extreme background. With a relatively small amount of lighting equipment on hand Director of Photography Kristin Glover and gaffer Shaun Madigan selectively lit a few rides in the background to achieve the depth of field that Director Jeff Wishengrad wanted.

The musicians had to be lit very carefully because their dark skin tones had to read against very dark backgrounds. The main key light was a 10K off to the musicians' right, but each actor needed his own fill light, Inkies with Tough-Spun diffusion in front effectively brought out enough detail without looking like an additional source.

The jazz man's sax solo on the merry-go-round is one of the most interesting visuals in the film. In the shot, Hank Rolike is playing the sax, while strutting down the walkway between the inside and outside row of horses. D. P. Glover was hand holding the Arri-BL while walking backward in pace with Hank. The fact that the merry-go-round was moving in the opposite direction that Hank and the camera were moving added an odd ambiguous motion that achieved the dreamlike feeling the shot required. There was almost no fill lighting for this shot because Director Jeff Wishengrad wanted a silhouette effect.

Another interesting scene was also shot on the merry-go-round. The scene is a dialogue scene between the two young leads. The ride is spinning around. Four 2K Lowel-Lights were put in stationary positions inside the center circumference of the ride. This was used most as a soft fill source. The primary light was the sun. This meant that the lighting was continually changing intensity and color temperature. At first it was thought a problem but when the dailies were screened, the shot had a very natural look.

The two weeks in El Cajon went smoothly. Then the crew moved back home to Los Angeles for four more days of interiors. The exterior of Mel's trailer was shot inside a sound stage at UCLA. To save the expense of building a trailer set, an actual trailer was used and lit either for day or night. Club 88 nightclub in West Los Angeles served as three different nightclubs in the film. This was successfully accomplished due to different lighting styles and effective art direction by Mark Goldberg. Principal photography wrapped on schedule October 30th.

Post-Production

Wildwood Film Services was gracious enough to make their post-production facility and equipment available. Jeff Wishengrad, as Film and Sound Editor, was able to make full use of Wildwood's two KEM Universal editing consoles, transfer, screening and foley facilities.

After the fine cut was approved, opticals and sound work began. The opticals shot by Movie Magic consisted of an opening title sequence, optical zoom-ins stop/freeze frames flops and end titles. Composer David Izzard took film counts for the film's score and sound effects were gathered from the production tapes, library and new field recordings. Almost one third of the dialogue needed replacement because the amusement park was right next to a highway. A rather unconventional looping technique was used, and proved to be about 95 percent cheaper than in-studio looping and also achieved a very real, non-looped quality.

All of the lines for a given character were transferred from the 35mm cut work track to ¼". The lines were broken into easily repeatable phrases and then spliced beginning to end, thus making a loop. Then a quiet outdoor area was selected and two Nagras were set up, one for the loops, one for the new clean recordings. The actor listens to the line over and over again on headphones until he gets the rhythm of it down. Then by mixing the live mike with the playback loop to the actor's headphones, the actor can repeat the lines until he is certain it matches in length and delivery. Of course, if the delivery is to be changed, one just has to make sure the loops begin and end with the live line reading. When this is finished, the selected readings are transferred to 35mm mag film and conformed to match the old sync readings.

In all, there was an average of 15 sound units per reel—four dialogue units, around nine effects and foley units and two music units. The film was mixed at Todd-AO over a three week period, a few hours at a time.

Once negative was conformed, it was turned over to MGM for answer printing. The print was approved by the end of July, 1981.

Some advice the filmmakers feel is important to pass on to other students about to embark on any type of film project is to not let the word "no" bother you. Don't assume you have to pay for something just because you don't think anyone will donate it. Call every company that can give you something. If you can't get it free then maybe you can get it at reduced cost. But don't be discouraged; 90 percent will say no, but it's the other 10 percent that will come through.

Also, be completely professional to your cast and crew. Don't take anyone for granted from your cinematographer to the person who makes coffee in the morning. Every JAZZ MAN cast and crew member was thoroughly committed and completely professional at all times, even though they were not paid for their time. In addition to those already mentioned, there was Julie Blecha, assistant director; Gary Kenny, John Allen and Glen Miller, camera assistants; Louis Zwier, key and dolly grip; Miriam Sherette, best boy; Francis Dorfman, script supervisor; Carol Frank, Assistant Editor. Mark Goldberg, previously mentioned as art director, also was production soundman; Robin Mackie, make-up ... Also the San Diego State students were the hardest working production assistants ever seen and without them there would have been no way to accomplish the average of twenty-five setups a day that was necessary to stay on schedule.

An infinite amount of thanks go to all those people and the dozens of organizations that gave so freely of their time, goods and services. All of these factors led to JAZZ MAN being a very enjoyable filmmaking and film watching experience. ■

LTM

The widest range of HMI lights in the industry

from new **6K FRESNEL**

(same output as Brute arc, but uses only 65 Amps A.C.)

. . . to new

MICRO-SET LIGHTING (MSL) Systems!

CALL OR WRITE FOR NEAREST DEALER.

VISIT OUR NEW LTM LIGHTING WORKSHOP STUDIO IN HOLLYWOOD!

LTM CORP. OF AMERICA

1160 N. Las Palmas Avenue, Hollywood, CA 90038 • (213) 460-6166 • Telex 67-7693

LTM FRANCE: 104 Boulevard Saint-Denis • 92400 Courbevoie-France • 788-44-50

LTM 6Ks and/or MSL (Micro-Set Lighting) Systems chosen for shooting:

President Reagan Anniversary–Santa Barbara, Calif.
Academy Awards (ABC-TV)–Hollywood, Calif.
United Way Commercial–L.A./Hollywood, Calif.
Datsun Commercial–L.A./Hollywood, Calif.
Union 76 Commercial–L.A./Hollywood, Calif.
Diners Club Commercial–Florida
"Blue Skies Again," Theatrical Film–Florida
Lipton Tea Commercial–Florida
"The Sender," Theatrical Film–Atlanta, Ga.
"One Life To Live" (ABC-TV)–Feature Film–Atlanta, Ga.
U.S. Fidelity & Guaranty Insurance Co. Commercial–Atlanta, Ga.
International House of Pancakes Commercial–Dallas, Tex.
Ft. Worth National Bank Commercial–Texas
National Liberty Marketing Insurance Co. Commercial–Texas
"Table For Five"–CBS Theatrical Film–U.S. and Europe
United Airlines Commercial–Seattle, Wash.
Space Shuttle Landing (ABC-TV)–New Mexico

LTM 6K LUXARC AND MSL SYSTEMS NOW AVAILABLE AT:

Hollywood–L.A., Calif.
CINE-PRO
(213) 464-3800
KEYLITE
(213) 841-5483
PSI
(213) 466-6321

New York, N.Y.
CAMERA SERVICE CENTER (CSC)
(212) 757-0906

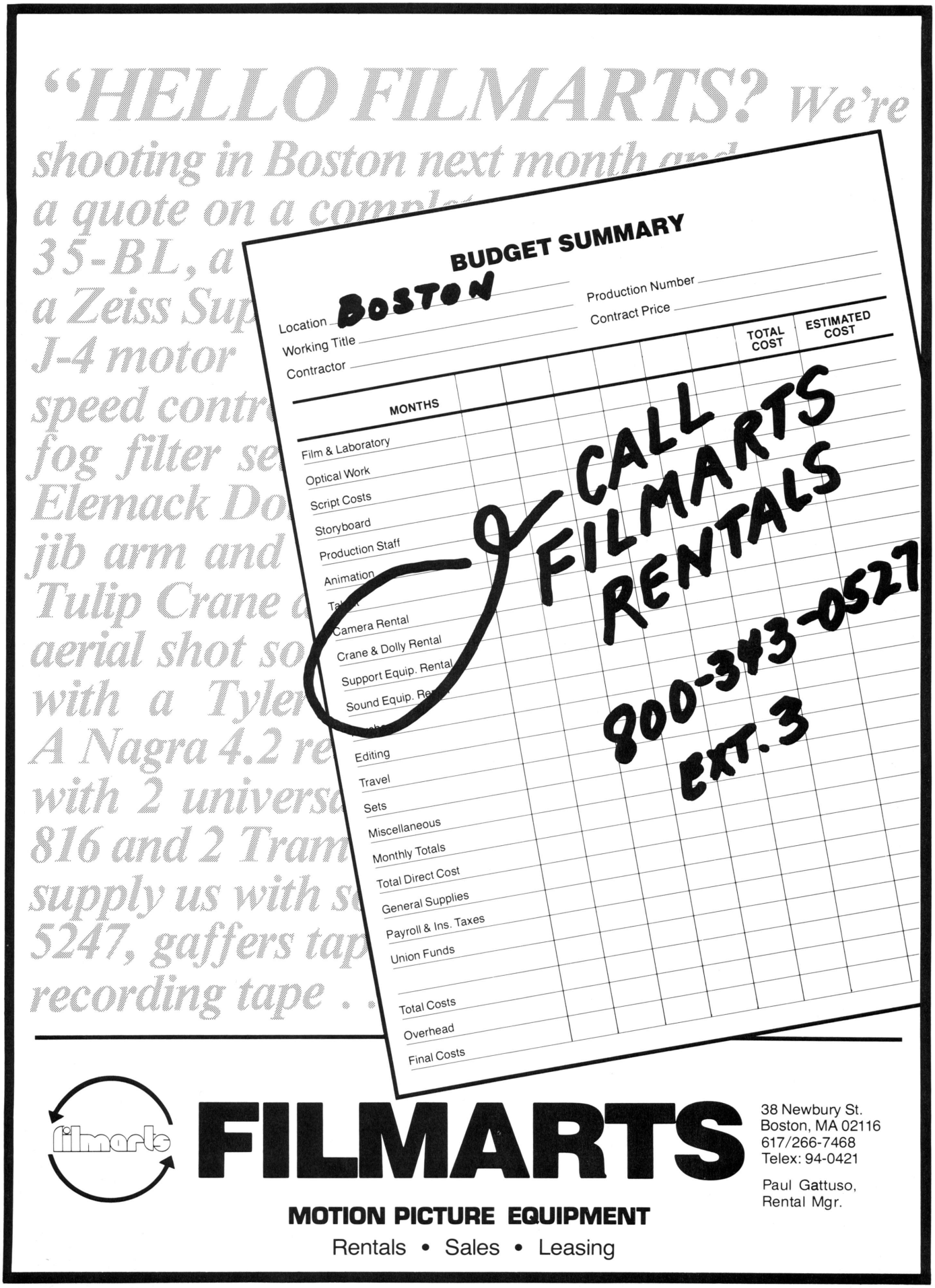
Atlanta, Ga.
PRODUCTION SERVICES, ATLANTA (PS-A)
(404) 622-1311

Dallas, Tex.
CONCEPT LIGHTING
(214) 824-6135

Denver, Colo.
LIGHTING SERVICES, INC.
(303) 773-2612

Ft. Lauderdale, Fla.
MOTION PICTURE AND TV LIGHTING SERVICE
(305) 522-1147

Davenport, Iowa
MOTION PICTURE AND TV LIGHTING SERVICE
(319) 322-0570
–Or Call–
LTM CORP. OF AMERICA
(213) 460-6166


"HELLO FILMARTS? We're
shooting in Boston next month
a quote on a
35-BL, a
a Zeiss Sup
J-4 motor
speed contr
fog filter se
Elemack Do
jib arm and
Tulip Crane
aerial shot so
with a Tyler
A Nagra 4.2 re
with 2 univers
816 and 2 Tram
supply us with s
5247, gaffers tap
recording tape . .
BUDGET SUMMARY
Location BOSTON
Working Title
Contractor
Production Number
Contract Price
MONTHS
TOTAL COST
ESTIMATED COST
Film & Laboratory
Optical Work
Script Costs
Storyboard
Production Staff
Animation
Camera Rental
Crane & Dolly Rental
Support Equip. Rental
Editing
Travel
Sets
Miscellaneous
Monthly Totals
Total Direct Cost
General Supplies
Payroll & Ins. Taxes
Union Funds
Total Costs
Overhead
Final Costs
CALL FILMARTS RENTALS
800-343-0527
EXT. 3
filmarts
FILMARTS
38 Newbury St.
Boston, MA 02116
617/266-7468
Telex: 94-0421
Paul Gattuso,
Rental Mgr.
MOTION PICTURE EQUIPMENT
Rentals • Sales • Leasing

BEST SUPPORTING CAMERA

Three out of five of the nominees for *Best Picture of 1981* were photographed with this camera system. Of these three, *Chariots of Fire* was awarded *Best Picture* and *Reds, Best Cinematography.* The camera, **Arriflex 35BL.**

It just goes to show. If an Academy Award had been presented this year for *"Best Supporting Camera,"* the Arri 35BL would have swept the Oscars ... probably not the name you expected in the sealed envelope.

To get right down to the bottom line, the decision to go with one major camera system over the other won't improve your chances for an award winning film nor affect the box office or Nielsen results. What counts is production value.

Selecting an Arriflex from ***Otto Nemenz International*** will result in substantial savings in both rental costs and production time. Savings that could be used for better production value.

Producers and Cameramen alike should consider the merits of Otto Nemenz International's new, ultra-quiet, **Arriflex 35BL3's.** Very fast to work with on the set and not requiring blimped lenses — these latest generation cameras have been carefully tuned and brought up to Otto Nemenz International's exacting standards of perfection.

So, next time surround yourself with good company. Arriflex from *Otto Nemenz International.* A distinguished and well earned reputation. Delivering award winning results.

OTTO NEMENZ INTERNATIONAL, INC.

7531 SUNSET BLVD. • HOLLYWOOD, CA 90046 • (213) 874-0811

HAWAII OFFICE: Aina Haina Professional Bldg. • 850 W. Hind Drive, Suite #117, Honolulu, HI 96821 • (808) 395-1611

the best table from a technical and ergonomical point of view.

Oldelft's Cinemonta is the perfect mix of optical, electronic and ergonomical techniques.

Cinemonta's optical crown system -an Oldelft's exclusive- gives you clear, sharp images, right to the edges of the screen, at any speed up to 150 f/s. The 24 lenses in the optical crown system do away with annoying prism ghosts and hollow prism colour fringing.

Now you can use your editing table to evaluate rushes and detect faults previously found only during projection. But there's more to Cinemonta than the sharpest picture on an editing table - there's a whole array of additional refinements to help you. The electronic counter switches between frames, feet, meters, and time at the touch of a button - and it sets the table to either 24 or 25 f.p.s. sync speed automatically.

The high quality sound of Cinemonta is a pleasure to listen to. In fact it's so good, some owners have recorded mini-mixes from it. And the optional pitch corrector gives you intelligible speech and music at all speeds from ½ to 2½ times sync speed. Ergonomic design, producing a precision table that will work hard for you year after year.
For the whole story, call or write us.

KLM Associates, Inc.
5161 River Road, Building no. 2,
Bethesda, MD 20816, USA.
Tel. (301) 986.7944, telex 908041

Oldelft
nv Optische Industrie De Oude Delft
P.O. Box 72, 2600 MD Delft, Holland.
Tel. (015) 14 59 49, telex 38011

AUSTRALIA, John Barry Cine Group, P.O. Box 199, ARTARMON 2064 - SYDNEY, Tel. (02) 4396955.
AUSTRIA, Raczkövi, Fenzlgasse 8-10, 1150 VIENNA, Tel. (0222) 954763.
BELGIUM, ARC s.p.r.l., Rue du Bois de Linthout 45, 1200 BRUSSELS, Tel. (02) 7357599.
B.R.D., Cine TV. GmbH., Mühlerweg 6, 8000 MÜNCHEN 60, Tel. (089) 886421.
CANADA, Soundmix, 65 Front Street East, TORONTO - ONTARIO M5E 1B5, Tel. (416) 368.1791.
DENMARK, Ole Bruun, Bernstorffsvej 100, DK-2900 COPENHAGEN-HELLERUP, Tel. (01) 627562.
ENGLAND, P.A.G., 565, Kingston Road, LONDON SW 20-8 SA, Tel. (01) 5433131.
FINLAND, G.W. Berg, Vääksyntie 4, SF - 00550 HELSINKI 55, Tel. (90) 171541.
FRANCE, Techni-Cine Phot, 64bis, Blvd. Jean Jaurès, 93402 SAINT-OUEN, Tel. 257/1130.
HOLLAND, Fofic, Kruyderlaan 35, 3431 BM NIEUWEGEIN, Tel. (03402) 44550.
HONG KONG, Edutec International, 18/F Gee Chang Hong Centre, 65 Wong Chuk Hang Road, WONG CHUK HANG, HONG KONG, Tel. (5) 520253.
INDIA, Katonix, C-15 Greater Kailash I, NEW DELHI, Tel. 630215.
KOREA, Myungju Trading Comp. C.P.O. Box 1630, SEOUL, Tel. 722.3746.
SINGAPORE, Theatre Equipment, Electr. & Hardware Centre, Unit No. 107, Kitchener Road, SINGAPORE 0820, Tel. 2930198.
SPAIN, Filson, Tiziano 6, MADRID 20, Tel. (341) 2336431.
SWEDEN, AB Vidco, Garvargatan 11, 10422 STOCKHOLM, Tel. (08) 520160.
SWITZERLAND, Cine Swiss - Med. Div., Cine Construction S.A., 23, rue Pré-du-Marché 1004 LAUSANNE, Tel. (021) 381151.
U.S.A., Cinergy Comm. Corp. 321 West 44 Street, NEW YORK N.Y. 10036, Tel. (212) 528.2900.
U.S.A., Alan Gordon Enterprises, 1430 Canuenga Blvd., HOLLYWOOD 90028 Cal. Tel. (213) 466.3561.
YUGOSLAVIA, S. Begic, Darovalaca krvi 9/1, 71000 SARAJEVO, Tel. (71) 523834.

The Recording Camera

The RCA Hawkeye recording camera is a completely self-contained video camera and recorder capable of recording 20 minutes of broadcast quality video on a ½" VHS cassette.

A report from the National Association of Broadcasters convention on the latest developments in the design of the single piece video camera/recorder

From a filmmaker's point of view one of the disadvantages of shooting video is that you have to carry the processing laboratory around with you in the form of signal processing circuitry and a videotape recorder. There are several ways in which the awkwardness of this arrangement can be reduced. The size and weight of the camera can be reduced by housing as many of the processing circuits as possible in a separate control unit (as in the CEI 310 or the Panacam) or techniques can be used to reduce the size of the cable and increase the distance over which the signal can be transmitted before it must be processed and/or recorded. It is even possible to replace the cable with microwave transmission between the camera and the recorder. None of these techniques, however, result in the kind of mobility enjoyed with a film camera, and the dream of a completely self-contained portable video camera haunts every video cameraman who has ever shot film. Now the dream is becoming a reality. At the recent convention of the National Association of Broadcasters (NAB) in Dallas six camera manufacturers exhibited single piece camera/recorders capable of broadcast quality images and weighing between 15 and 27 pounds.

The main impetus for the development of these cameras has been the development of electronic newsgathering (ENG). It should be emphasized that the cameras are designed for ENG work and cannot perform as well as production cameras. They do surpass the image quality obtainable with ¾" videotape recorders, however, and the ½" recording formats developed for these cameras have the potential of equalling the performance of current 1" recorders.

All of the cameras use cassettes, most of which record 20 minutes of video with two tracks of audio in addition to a control track and a time code track. They have rechargeable batteries mounted on the camera which can run the camera continuously for 40 minutes to an hour. The video can be played back and viewed in the camera viewfinder, and there are separate playback decks which can be used for transferring the cassettes to another tape format or for editing the original cassettes. Most of the cameras are designed so that the recorder portion can be removed; and the camera can be used with a conventional recorder, or the recorder can be used with a different camera.

The Sony BVP-1 Betacam uses a single full color tube and records on Beta cassettes.

RECORDING FORMATS

In order to reduce the weight and size of the videotape recorder sufficiently to permit mounting it on the camera while at the same time achieving broadcast quality recording, it was necessary to design a new recording format. Four different recording formats are used in the cameras shown at NAB: one recording on ½" VHS cassettes, one recording on ½" Beta cassettes and two recording on ¼" CVC cassettes. The formats are incompatible with each other as well as any other existing format, and the need for standardization of a new ½" format was the topic of much discussion at NAB. It appears unlikely that there will be any widespread use of the new equipment until an industrywide (and hopefully international) standard for the recording format is established.

There are three principal factors which make it possible to record a broadcast quality signal on ½" or ¼" cassettes. First of all the tape speed is increased substantially over the speed of the tape in a home video cassette recorder. Secondly the technology of magnetic recording has advanced to the point where the recording density possible in the new formats is more than double that of any other videotape recording format. Finally the luminance and chrominance components of the video signal (i.e. the brightness and the color) are recorded separately rather than being combined into a composite signal prior to recording. One benefit of the increased tape speed is an improvement in the audio recording as well. The ½" recorders have an audio frequency response of 50 to 15,000 Hz ± 3 dB and wow and flutter of 0.2% rms.

In addition to the new recording format most of the cameras have redesigned pick-up devices in order to reduce the size of the camera. These devices include ½" pick-up tubes, a single full color tube and solid state sensors. When evaluated sep-

Table 1: SPECIFICATIONS FOR RECORDING CAMERAS

Recording Camera	Recording Format	Weight	Size	Pick-up Device	Cassette Record Time	Power Consumption	
Bosch KBF-1	¼" LINEPLEX CVC cassette	15 lbs	l: 16" h: 8.4" w: 3.5"	½" tubes (3)	20 min.	25 watts	
Hitachi SR-1	¼" CVC	16.4 lbs	l: 13" h: 8.5" w: 3.9"	⅔" MOS (3)	8 min.	8 watts	
Hitachi SR-10	½" M-Format VHS cassette	19.9 lbs	l: 15.6" h: 10.6" w: 4.6"	⅔" MOS (3)	20 min.	19 watts	
Ikegami HL-83*	½" M-Format* VHS cassette	24.3 lbs	l: 12.5" h: 9.3" w: 8.3"	⅔" tubes (3)	20 min.	28 watts	
Panasonic RECAM	½" M-format VHS cassette	22 lbs	l: 22.5" h: 9.5" w: 4.7"	⅔" tubes (3)	20 min.	27 watts	
RCA Hawkeye	½" Chroma Trak VHS cassette	26.8 lbs	l: 21.5" h: 9.5" w: 4.6"	½" tubes (3)	20 min.	36 watts	
Sony Betacam BVP-1	½" Betacam Beta cassette	17.8 lbs	l: 15.3" h: 8" w: 4.4"	⅔" HBST single tube	20 min.	20 watts	
Sony Betacam BVP-3	½" Betacam Beta cassette	20.3 lbs	l: 17" h: 8" w: 4.4"	⅔" tubes (3)	20 min.		

*Detailed specifications for Ikegami ½" recorder unavailable at press time.

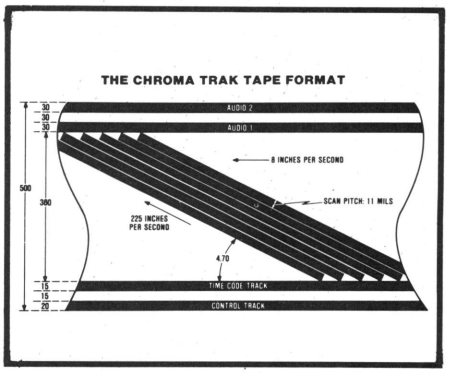
arately from the recorder, the performance of the cameras with these new pick-up devices compare fairly well with the performance of many ENG cameras using three ⅔" tubes.

The most widely adopted recording format so far is the ½" format developed by Matsushita (Panasonic) in conjunction with RCA. It uses VHS cassettes and is called M-format by Panasonic and Chroma Trak recording format by RCA. It has a longitudinal tape speed of 8 inches per second and records the video signal with helical scan recording having a writing speed of 225 inches per second. The luminance and chrominance components of the video signal are recorded on parallel tracks with the luminance track being about 2½ times as wide as the chrominance track. Each scan of the tape records the luminance and chrominance information for one field simultaneously. The time code, audio and control track are recorded on longitudinal tracks on the edges of the tape in such a way that the video can be edited without interfering with any of the other tracks.

The image quality obtainable with Chroma Trak or M-Format recording is superior to that of the best ¾" recorders in every way. The most substantial improvements are in the recording of the chrominance signal. The chrominance bandwidth is 1.0 MHz as compared to 0.3 MHz with ¾" recorders thereby making the chrominance resolution 3 times as sharp in the new format. The chrominance signal-to-noise ratio is 48 dB rather than 38 dB as is the case with ¾". The chrominance to luminance resolution is three times better in the new format than it is in the ¾" format. In addition there are improvements in the resolution and geometric fidelity of the luminance signal as well. The net result of all this is that the original image is sharper and clearer, and it holds up much better as it is dubbed through several generations.

In addition to the RCA Hawkeye and the Panasonic RECAM, ½" recording cameras designed by Hitachi and Ikegami use Chroma Trak or M-format. It has been submitted to the Society of Motion Picture and Television Engineers (SMPTE) for adoption as an industry standard.

The second ½" format was designed by Sony to use Beta cassettes and is similar in its basic approach to Chroma Trak. It records the luminance and chrominance signals on two parallel tracks simultaneously by means of helical scan recording with the drum rotating in the same direction as the tape movement, and it has two longitudinal tracks along each edge of the tape. The tape speed, is 4.7 ips rather than 8 ips, but the writing speed is 270 ips.



The drum is slightly smaller than the drum for the Chroma Trak recorder, and it is rotating faster. The positions of the control track and the time code track are reversed in comparison to the Chroma Trak format, and the physical dimensions of the various tracks are different in the two formats. Twenty minutes of material can be recorded on an L-500 Beta cassette, which is smaller in its physical dimensions than a VHS cassette. Sony's Betacam recording format has a video signal-to-noise ratio of 46 dB in the color mode, a video frequency response of 100 Hz to 4.0 Mhz, a luminance/chrominance delay of 50nsec, an audio frequency response of 50 Hz to 15 KHz and an audio signal-to-noise ratio of 50dB. Sony is still refining the recording format and expects to submit it to the SMPTE as a proposed standard in June.

Battery Duration	Sensitivity	Resolution	Registration	Camera S/N Ratio	VTR S/N Ratio
1 hr.	1250 lux @ f2.0 (70% reflectance)	40% @ 4.0 MHz (320 TV lines)	Zone 1: .05%	53 dB	Lum: 47 dB Chr: 46 dB
2 hr.	2000 lux @ f3.5 100 lux @ fl.4 with +9 dB gain	450 TV lines	0% (Solid State Sensor)	49 dB	45 dB
1+ hr.	2000 lux @ f3.5 100 lux @ +9 dB fl.4	450 TV lines	0% (Solid State Sensor)	49 dB	Lum: 47 dB Chr: 48 dB
1.5 hr.	2000 lux @ f4.5 24 lux @ fl.4 with +18 dB gain	500 TV lines	Zone 1: 0.1% Zone 2: 0.2% Zone 3: 0.6%	55 dB	Lum: 47 dB Chr: 48 dB
1 hr.	200 fc @ f4.0 (3200°K, 60% reflectance)	600 TV lines	Zone 1: 0.1% Zone 2: 0.2% Zone 3: 0.5%	59 dB	Lum: 47 dB Chr: 48 dB
1.5 hr.	56 fc @ fl.4 (3200°K, 60% reflectance)	600 TV lines (51% @ 400 lines)	Zone 1: 0.1% Zone 2: 0.2% Zone 3: 0.3%	55 dB	Lum: 47 dB Chr: 48 dB
1 hr.	2000 lux @ f4.0	400 TV lines	0% (single tube)	53 dB	46dB
40 min.	2000 lux @ f4.0	600 TV lines	Zone 1: 0.05% Zone 2: 0.1% Zone 3: 0.1%	57 dB	46 dB

The lightest of all the recording cameras is the Bosch KBF-1 which uses ½" tubes and records on ¼" cassettes.

The ¼" formats use compact video cassettes (CVC) which are slightly larger than an audio cassette and one third the size of a Beta cassette. The Bosch LINEPLEX ¼" recording format was introduced for the first time at NAB, and Bosch engineers explained the design of the format for AMERICAN CINEMATOGRAPHER even though they had not yet published any specifications for the system. The key to the LINEPLEX format is the use of a charge couple device (CCD) to temporarily store each line of video prior to recording and the use of helical scan recording to record each line of video on a parallel track. Storing each line in one of two CCD's and recording adjacent lines on separate channels enables the recorder to spend twice as much time recording a line as is required to scan it in the camera. Doubling the time for recording a given scan line is the equivalent of halving the maximum frequency to be recorded and permits the use of a much narrower track. The luminance and the chrominance components of each scan line are recorded sequentially with 70% of the time being devoted to the luminance component and 30% to the chrominance component. Relying on azimuth recording rather than guard bands to separate the tracks further reduces the amount of space required to record the various tracks. The net result is that the Bosch ¼" format can record broadcast quality video superior to the signal recorded by a ¾" recorder along with two audio tracks and a time code track. The video signal-to-noise ratio is 47 dB for luminance and 46 dB for chrominance. The bandwidth is 3 MHz for luminance and 1 MHz for chrominance. The tape speed is 5 ips, and a standard ¼" CVC cassette will record 20 minutes of material.

Hitachi also has a ¼" CVC recorder capable of broadcast quality recording built into their SR-1 camera. The recording format is a helical scan format with luminance and chrominance for each field recorded on adjacent parallel tracks. It includes two audio tracks and a control track but not a time code track in its current prototype version. The cassette running time is 8 minutes, the video signal-to-noise ratio is 45 db, and the audio frequency range is 50 to 10,000 Hz.

Ikegami has a ¼" CVC recorder which can be mounted onto their HL-83 camera. Details about the recorder are unavailable at present, but it uses parallel tracks to record luminance and chrominance separately.

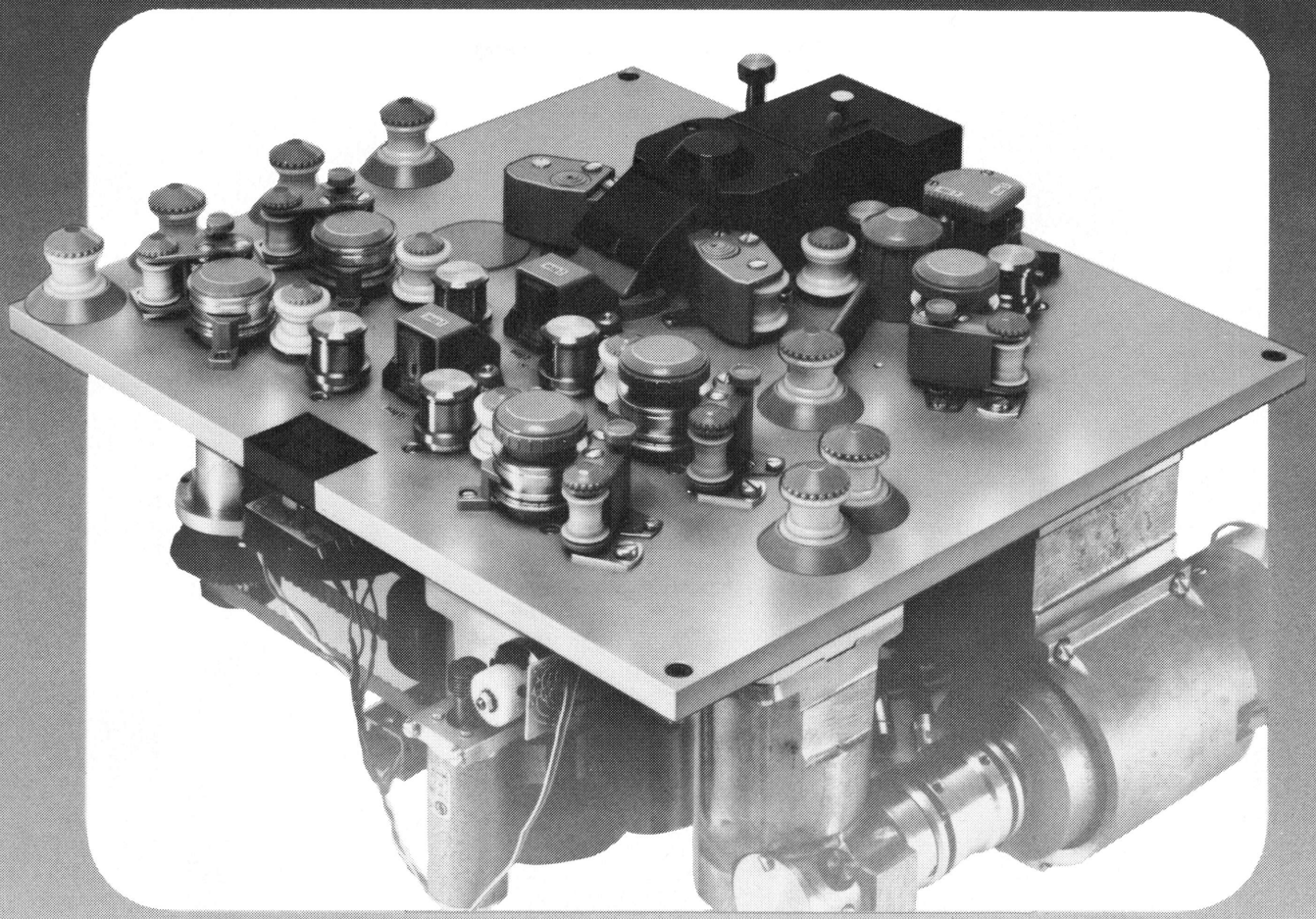
THE CAMERAS

There were eight recording cameras shown at the NAB convention. The RCA Hawkeye, the Sony BVP-1, the Sony BVP-2, the Panasonic RECAM, the Hitachi SR-1, the Hitachi SR-10, the Ikegami HL-83 and the Bosch KBF-1. The Ikegami HL-83 is a three tube ⅔" ENG camera which has been designed with a "system adapter" on the right side of the camera which permits attachment of either a ½" M-Format recorder or a ¼" CVC recorder. Ikegami also offers a separate 1.2" recorder which can be connected via the system adapter and is designed to be hip mounted or worn on a shoulder strap. The Panasonic RECAM also uses three ⅔" tubes in conjunction with a detachable M-Format recorder. The RCA Hawkeye and the Bosch KBF-1 use three ½" tubes with a detachable ½" recorder on the Hawkeye and a detachable ¼" recorder on the KBF-1. Sony has two cameras for their Betacam system: The BVP-1 which uses a single full color ⅔" tube and the BVP-3 with three ⅔" tubes. Hitachi has two cameras using three ⅔" MOS solid state pick-up devices instead of tubes: the SR-1 with a built in ¼" recorder and the SR-10 with a detachable ½" M-Format recorder. There are studio cassette players and editing controllers for each system and in most cases it is possible to use either the camera or the recorder with conventional equipment by means of some sort of adapter. A rough comparison of the specifications for the recording cameras based on information available at the NAB convention is attempted in Table 1. ■

The Panasonic RECAM is seen here with the studio recorder and editing controller which enable the cassettes recorded in the camera to be edited or broadcast directly.

THE HEART

STEENBECK precision in detail



QUALITY is not an accident. Years of experience, superior concepts, modern manufacturing procedures and an experienced team are the basics for STEENBECK quality.

Details:

- TRANSPORT PLATE precision machined, 16mm thick, assures vibration free operation and precise alignment of components. Anodized for easy cleaning and lasting beauty.
- PICTURE SCANNING through 18 sided polygon Prism affords bright and steady picture even under adverse light conditions.
- THREADING is simple and scratch free due to strategically placed film guides and rollers. Sync points are provided both right and left on most tables.
- FILM ROLLERS of large diameter, and made of stainless steel or polyamide plastic, provide a smooth safe film flow.
- MAINTENANCE FREE (Sintered, Oil impregnated) bearings and high precision, sealed, roller bearings guarantee smooth running and long life.
- FLYWHEELS combined with air damped tension rollers assure low wow and flutter content.

STEENBECK

Steenbeck Inc.

(213) 998-4033 • Telex: 19-4293
9045 Eton Avenue, Suite A
Canoga Park, California 91304

VITTORIO STORARO A.I.C.

Best Cinematography for

REDS

in Technicolor's

new E·N·R™ process

Congratulations, Vittorio...
and thank you from all of us.

Technicolor®

World Wide Services to the Cinema Industry

Hollywood ▪ London ▪ Rome ▪ New York

SINGLE CAMERA VIDEO PRODUCTION

Part I: Shooting "Harper Valley P.T.A." with the Panacam

By HOWARD SCHWARTZ, ASC

Editor's Note: This is the first in a series of articles about the application of single camera film production techniques to videotape production. Next month's issue of AMERICAN CINEMATOGRAPHER will include a detailed report on a half-hour pilot shot with the Ikegami EC-35 using a very different approach and edited on the CBS off-line editing system designed specifically for single camera production.

This season's last episode of "Harper Valley P.T.A." was produced on videotape rather than film. Universal Studios wanted to experiment with videotape production and asked Sam Strangis if his Ten/Four Productions would be willing to shoot the last half-hour episode on tape to see what kind of savings might be realized and whether the end results would be just as good. Art McLaird, the line producer for the series, estimated that it should be possible to cut the cost of a half-hour episode by $35,000 if it were shot on tape rather than film. Given the state of the economy these days both the networks and the suppliers of programming are looking for every possible way to reduce production costs. This coupled with the fact that networks are willing to take delivery of shows on videotape rather than film plus the fact that worldwide syndication of a show is now possible on videotape makes videotape a very attractive medium for this sort of programming.

As Art puts it, if the cost savings with tape can be enough to make the difference between giving a show the go-ahead and cancelling it, everyone should be glad to work in tape. He knows there is a lot of apprehension about the increase in tape production, but he says, "I hate to see film people being afraid. And I know the feeling. They're saying 'Oh boy, here it comes!' But I don't think it's anything to be afraid of, because there is obviously room for everybody. It's like radio and television. All of a sudden television was here and everybody said, 'There goes radio.' Well, radio isn't dead; and film isn't going anywhere."

"I hate to see film people being afraid. And I know the feeling. They're saying 'Oh boy, here it comes!' But I don't think it's anything to be afraid of."

– Art McLaird, Producer

The estimated savings stemmed from the elimination of all rawstock, laboratory and optical costs plus the reduction of the post-production time. The plan was to shoot the show in exactly the same manner as the film versions had been shot with the same crew, the same lighting style and the same production schedule. No attempt was to be made to cut costs or production time by shooting multiple camera and editing live, since the lighting and the look for the show were predicated on single camera shooting. The plan was simply to replace the film camera with a video camera and then to do all the post-production work in tape.

I had been brought in to take over the photography of "Harper Valley P.T.A." midway in the season, and the producers told me the look they were after. Because of the subject matter and the tone of the comedy I established a relatively high key style, lighting to 200 fc and using a certain amount of diffusion. Everyone was very

Howard Schwartz talks with his crew via the intercom from the video control set-up where he confers with Rick Hoshkins. Schwartz found that a video controller was an invaluable member of his crew even though the Panacam can be operated completely automatically.

pleased with the look we were getting on film, and we wanted to duplicate it as much as possible on the tape show.

My only experience with videotape prior to this show had been the ice hockey sequences in MIRACLE ON ICE which were shot on tape in order to match the tapes of the Olympic games with which they were to be intercut. In that instance I had simply investigated how the arena at Lake Placid had been lit and tried to duplicate it at the Sports Arena here. Occasionally I had to pump a bit more light into the stands for the reaction shots, but basically I followed the multiple camera lighting scheme used by ABC at Lake Placid. Shooting a single camera show on a sound stage is obviously a very different job, but I was eager to try the experiment and see what we could do.

THE PANACAM

We decided to shoot with a Panacam because we wanted to make the transition as simple as possible for the crew, and overall I was very impressed with what the camera had to offer. I had never seen a Panacam before the day we spent shooting a test with it. I spent one day shooting tests and then went over to Panavision one afternoon with my camera crew and the video controller for a briefing on the camera. We all adapted very easily to the camera and during the five days of shooting we didn't lose a single minute due to any electronic problems with it. The thing I liked the most about it of course was the ability to use the Panavision lenses. Not only was I able to work with the same lenses I used in shooting film without having to worry about focal length conversions for the ⅔" video format, but I know I was getting Panavision quality. Some people assume that because the resolution of a television image is limited by the scanning pattern and bandwidth of the NTSC system, the quality of a lens on a video camera is not that critical; but the fact of the matter is just the reverse. Because of the limitations of the system, it is imperative to have the sharpest possible image going in. I have heard that other manufacturers interested in making top quality prime lenses for video cameras don't feel the market is large enough to justify the investment, but with the Panacam I had a full range of proven lenses to choose from.

Another major advantage the Panacam has over other video cameras in my estimation is the reflex viewfinder. Having an optical viewfinder in addition to the electronic viewfinder means that it is possible for the operator to see the area just outside the frame. He can see if a light or the mike boom is about to cut into the frame just as he can with a film camera. With the electronic monitor on any other video camera you only see what is actually in the frame as it is being recorded. The Panacam of course has a second electronic finder on it which our assistant cameraman did occasionally use, but frankly I believe he was watching the finder more out of curiosity than anything else. The reflex finder was the one the operator relied on.

I also have to say I am partial to the Panacam because it and the CEI camera it is based on are American made cameras. It's not simply a matter of patriotism; it's a matter of knowing that the manufacturer is right there behind the camera for support. One of the reasons Panavision rents cameras rather than selling them is that they want to be sure that every camera that goes out on a shoot incorporates the latest technology. This is particularly critical with a video camera where the technology is changing so fast that equipment becomes obsolete while it is still under warranty. Panavision has acquired CEI and both companies have always been committed to constantly upgrading their equipment. The modular design of the CEI 310 was conceived as a means of preventing obsolescence. It is a relatively simple matter to upgrade the electronics of a CEI camera by replacing or adding circuit boards to the control unit. Similarly Panavision has already begun upgrading the design of the Panacam in response to feedback from its use. They have redesigned the reflex finder to operate with a 90/10% split of the light rather than 70/30%, and they are designing a remote control to permit the camera operator to roll the tape machine.

TESTING THE CAMERA

We tested the Panacam for one day before deciding definitely to use it for the final episode of the series. We shot a series of set-ups on the stage and outside using both the Panacam and a BNCR with exactly the same lighting. On the stage we used a set for the kitchen and did some day scenes involving light coming through a window and a night scene with some practicals in the shot. We tried a relatively wide angle, panning as the actors moved through the set and a longer lens closeup and a two shot. For the exterior we set up a pan which went from bright sunshine to a shaded area and involved some back lighting. I used my normal camera crew plus Rick Hoshkins, who came with the videotape equipment from Compact Video. Rick operated the 1" tape recorder and functioned as a video controller.

I used a high resolution color monitor to check the exposure for the video and consulted with Rick who referred to a waveform monitor and a vectorscope. The film negative was transferred to 1" tape so that we could compare the results. Actually we initially transferred a daily print to videotape, but we decided the dailies we had were not as good as they should have been so we went back and transferred from the negative.

I discovered several things with the test. First of all I discovered that I could use the same lighting for tape that I was using for film—provided I opened up about a stop for the tape. I could see that I had greater depth of field with videotape even at the wider f-stop. I also learned that in using diffusion I would get the same effect by using a grade less diffusion with tape than film, e.g. a Mitchell A rather than a Mitchell B.

Most importantly I learned that a video control man is an invaluable member of the camera crew in shooting tape, especially for exterior work. With the interiors the lighting ratio was within the latitude of the video camera, so we could just set the f-stop and shoot. On the exterior set-ups where the contrast ratio exceeded the latitude of the camera we tried three ways of handling the exposure. First my assistant cameraman pulled the f-stop as we panned from sunlight into shadow areas. Secondly we put the camera on automatic iris, and finally we let Rick control the exposure manually via the remote iris control on the camera control unit. I decided for the production to let Rick control the exposure on the exteriors. By using both the picture monitor and the waveform monitor he was able to ride the iris control to maintain a consistent exposure for flesh tones on the exteriors. He felt he was able to make adjustments more smoothly and more accurately than would have been achieved by simply putting the camera on auto iris.

For one scene during the production we tried using the tone capture auto iris control. This is a feature of the Panacam which permits the auto iris to be tied to a specific color in the scene. It can be set to expose for flesh tone and should automatically keep the exposure at the proper level for consistent flesh tones. We tried using it for a scene involving picketers demonstrating in front of a building when clouds were playing havoc with our light level. Unfortunately one of the picket signs was a yellow which was too close to skin tone and it caused the camera to stop down when it entered the frame in bright sunlight. We tried again and had better luck with Rick controlling the iris manually. For all the rest of the exteriors Rick controlled the iris manually from the camera control unit by referring both to the picture

Between them, these 5 pictures won 32 Academy Award nominations and 9 Academy Awards.

CHARIOTS OF FIRE

REDS

arthur

RAGTIME

EXCALIBUR

They were all filmed with Arriflex cameras.

They won three of the five nominations for Cinematography. The Directors of Photography are:

MIROSLAV ONDRICEK

VITTORIO STORARO

ALEX THOMSON

And one of them * won the Cinematography Award.

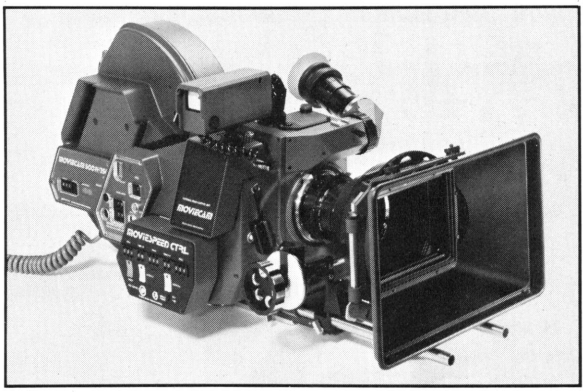
*Mr. Storaro

We're proud that our cameras were used to shoot these motion pictures. And we'd like to congratulate the talented people who won this Academy recognition.

ARRI
ARRIFLEX CORPORATION

500 Route 303, Blauvelt, New York 10913. (914) 353-1400
600 N. Victory Blvd., Burbank, Calif. 91502. (213) 841-7070
6467 Northam, Mississauga, Ont. L4V 1J2. (416) 677-4033

QUIET ON THE SET...



with Moviecam from HPS.

Hill Production Service and Moviecam co-star to bring you the quietest, most cost-effective *total* 35mm camera system available.

Check these fine Moviecam features:

- Whisper Quiet—less than 20 dBA sound level*; no blimping necessary
- Simple, Instant Set Up and Operation—ready to shoot when you are
- Compensating Link Movement—ensures smooth pulldown and precise frame-to-frame registration
- Built-in, Optional Through-the-Lens Video Viewing
- Digiclapper—built-in, automatic optical slating
- Synchro Attachment—slaves camera motor to external pulses, HMI lights, front and rear projectors, and video monitors
- Microprocessed cine speed control—single frame to 48 fps
- Full Steadicam adaption

Add these HPS exclusives:

- Cost-effective—much more for your rental dollar than comparable systems
- Experienced film/video technicians to operate our systems
- Extensive inventory of top quality, professional accessories

Call today for complete information, our low, low rental rates and a list of satisfied producers using Hollywood's newest, "hot" camera system.

That's one thing we're not quiet about.

HPS
HPS
HPS

Hill Production Service, Inc.
1139 North Highland Avenue
Hollywood, CA 90038
213/463-1182

*as measured by AKG in Vienna, Austria

monitor and the waveform monitor. Most of the time his adjustments would be less than a stop although for one street scene I think he may have adjusted the iris as much as three or four stops.

THE VIDEO CONTROLLER

I should probably comment more fully on the function of the video controller as I see it. A lot of people are saying that the new video cameras are designed so that there is no need to have a video engineer on the crew for a single camera shoot. I think they are dead wrong. Not that the cameras aren't designed to function well automatically or that a film cameraman can't learn to use video tools; but there is no reason to cheat yourself out of a very helpful collaborator just because of some fear that he is going to mess up the image by tweaking knobs. The video controller essentially performs the same function as a laboratory timer. He can iron out minor fluctuations in exposure and color balance, and he can bring out shadow detail in ways that are impossible with film—all while you are actually shooting, so that the image gets recorded exactly the way you want it in the first place. In my opinion it is false economy to eliminate the video controller from the crew in order to cut production costs. If the image is not recorded properly during production, the cost of doing color correction in the editing may be more than the video controller's salary would have been. As Rick puts it, "Using a sophisticated video camera without a video controller is like shooting with an 8 × 10 camera and sending the negatives to the corner drug store to have machine prints made." You just aren't getting the most out of the system.

I think it is important for the cameraman to choose his video controller just as he would choose his operator or his gaffer. You need someone who understands how you work and what you are trying to do—someone with whom you can communicate efficiently. The video controller has to understand that there is more to evaluating an image than reading a waveform monitor, and the cameraman has to trust the video controller's ability to process the video signal for the best possible results. It is one thing to work with a timer in a lab during post-production and quite another to try to work on color correction during the shooting. When you are trying to light a show, you don't have time to get too involved in the mechanical end of recording the image. To get the best possible results you need a video controller who can be responsible for the consistency of the ex-

Continued on Page 607

On Location With The New *Tulip Crane* From Matthews

Produced and Directed by
Matthews Studio Equipment, Inc.

Music by Smooth Moves
Photographed in Tulipvision

International Release
by Matthews Europa, Inc.

Featuring a supporting cast of over
550 of the most talented products to ever hit the industry.

"Innovative . . ."
— Bernard E. Robertson, Sr., President
R & R Lighting Company, Inc.

"Fast set-up and strike-time . . ."
— Jerry Crowder, President
PS-A

"Goes where other Cranes won't go . . ."
— Bill Keith, President
Filmarts

"Amazing performance from a 600 lb. Crane . . ."
— Gregory Clapp, President
Camera Service Center, Inc.

"Unrestricting . . ."
— Jim Brennan, President
Cinema Services of Las Vegas

"Versatile, transportable and practical . . ."
— Leo Rosenberg, Rental Manager
The Camera Mart, Inc.

"Truly State-of-the-Art . . ."
— Michael Sheppard, President
Lee Lighting America, Ltd.

"Folds to eight feet for easy transport . . ."
— Tom Folsom, President
Media Specialties

"A safe bet for the Oscars . . ."
— Paul Harris, Managing Director
Samuelson Film Service

"The go anywhere Crane . . ."
— Frank Marasco, Vice President
Victor Duncan, Inc.

Don't miss this theatrical masterpiece!!
Now appearing at your neighborhood *Matthews* Dealer.

EAST COAST OFFICE:
143 West 20th Street • New York, New York 10011
Telephone: (212) 937-7454

matthews
STUDIO EQUIPMENT, INC.

EUROPEAN OFFICE:
Middenweg 49b, 1394 Ad Nederhorst Den Berg • Netherlands
Tel: (2945) 3988 • Telex: 10254 (GRIMA NL)

HEAD OFFICE:
2405 Empire Avenue • Burbank, California 91504
(213) 849-6811 or 843-6715 • Telex: 691599 (MATTHEW)

"ANNIE"...AND HOW IT WAS FILMED

One of the most successful stage musicals of all time is transformed into a rousing, colorful and thoroughly "cinematic" entertainment

"Tomorrow, tomorrow . . ."

It's easy to look back with pleasure on an era that looked forward with hope. ANNIE, the Ray Stark Production of a John Huston Film for Columbia Pictures, is a return to the optimism that characterized America in the 1930s.

People didn't have new clothes. Sometimes they didn't have the rent. They also didn't have nuclear proliferation, an angry Third World, hazardous wastes, or computers. Everything didn't cause cancer.

What they did have was *tomorrow.*

ANNIE, which stars Albert Finney, Carol Burnett, Bernadette Peters, Ann Reinking, Tim Curry, Geoffrey Holder, Edward Herrmann, and Aileen Quinn in the title role, is very much in the American grain.

In this film, directed by Huston and produced by Stark, and based on the hit Broadway musical, the heroine is a plucky little red-haired orphan who is our kind of heroine—not a martyr like Joan of Arc, not merely a survivor, but a winner.

That is one of the reasons why "Little Orphan Annie" was one of America's favorite comic strips from the time it first appeared in the New York Daily News on August 5, 1924, and later became a pioneer radio serial.

Drawn by Harold Gray, it appeared at its peak in more than 500 newspapers with a combined circulation in excess of 47,000,000. A survey by Fortune Magazine in 1937 showed it to be the most popular comic strip in America.

The Broadway musical it inspired won 22 major awards, including seven Tonys. Written by Thomas Meehan, with music by Charles Strouse and lyrics by Martin Charnin, it is now in its fifth year, one of New York's longest running hits. Touring companies have taken it to 50 U.S. cities and 14 foreign countries.

The comic strip was essentially an upbeat morality play. The Broadway show humanized it. ANNIE, the motion picture, draws on the tradition while going a step further, focusing more sharply on the relationships and making them more realistic.

In addition to producer Stark and director Huston, the film had Joe Layton as executive producer and creator of the musical sequences, Carol Sobieski as writer of the screenplay, with musical staging and choreography by Arlene Phillips. Dale Hennesy was production designer, Richard Moore, ASC, was Director of Photography, Margaret Booth was supervising film editor, Michael Stevenson, film editor, and Howard Pine was executive in charge of production.

Huston, who has 13 Academy Award nominations, says, "I hate to use so pompous a phrase as 'American folklore,' but I

Daddy Warbucks (Albert Finney) and Annie (Aileen Quinn) dance up a storm in the sparkling finale of "ANNIE", the Ray Stark Production of a John Huston Film for Columbia Pictures. The background to this scene is supposedly Daddy Warbucks' mansion, now the administration building of Monmouth College in New Jersey. It was built in 1929-30 as the home of F.W. Woolworth president Hubert T. Parson at a cost of $10.5 million.

Red-haired, freckle-faced Aileen Quinn was chosen from thousands of girls to play annie. (BELOW) Carol Burnett as the gin-soaked, man-hungry Miss Harrigan, head of the orphanage.

guess ANNIE comes under that heading. It's comic book in origin, and we've attempted to keep it very broad but pointed and funny."

The sumptuous appointments featured in ANNIE to characterize the fabulous life style of billionaire Daddy Warbucks included a stable of magnificent vintage automobiles.

The first of these to be seen in the film is a 1930 du pont Royal Town Car in which Warbuck's personal secretary pulls up in front of the orphanage in her quest for an orphan to spend a week at the mansion as an aid to improving Warbuck's image. The du pont shown in the film is one of only 489 ever built; fewer than a dozen of the luxury cars still exist. It and Warbucks' 1929 Duesenberg Dual Cowl Phaeton (which sold new for $14,000) were obtained from Harrah's Automobile Collection in Reno, Nevada, selected from the 1,000 antique, classic, vintage, and special-interest automobiles on display. The vehicles are all in fine original condition or precisely restored.

Warbucks' mansion was played by the administration building of Monmouth College in West Long Branch, N.J., and rented by the film-makers.

Formerly the home of Hubert T. Parson, president of the F. W. Woolworth Co., and constructed on the site of Woodrow Wilson's former summer White House, the structure was built from 1929 – 30 at a cost of $10.5 million.

It has 130 rooms, 19 baths, a 100-foot Venetian stained glass ceiling, and such accoutrements (many no longer in use) as an indoor swimming pool, bowling alley, ballroom, and chapel. An outstanding example of French architecture in the manner of Versailles Palace, it is listed in the National Register of Historic Places.

It was furnished for the film by set decorator Marvin March, who filled three and a

British star Albert Finney plays billionaire Daddy Warbucks, Annie's benefactor. (BELOW) Ann Reinking, star of ALL THAT JAZZ, plays Warbucks' secretary and ultimate love interest.

(LEFT) Director John Huston and Producer Ray Stark on the set of ANNIE. No mere figurehead, Stark is a very active, functional executive, closely involved in actual production. Huston's track record distinguishes him as a most versatile director—but ANNIE was his first musical (RIGHT) Huston and Stark discuss an upcoming sequence with Director of Photography Richard Moore, ASC on the set.

Rehearsal of a dance number in one of the 130 spacious rooms of the mansion, elaborately "dressed" by set decorator Marvin March, who said: "That house sucked up furniture like a vacuum cleaner." An outstanding example of Versailles-type French architecture, the mansion is listed in the National Register of Historic Places. (BELOW RIGHT) Cinematographer Moore seems to be praying for good shooting weather in reply to a suggestion from John Huston.

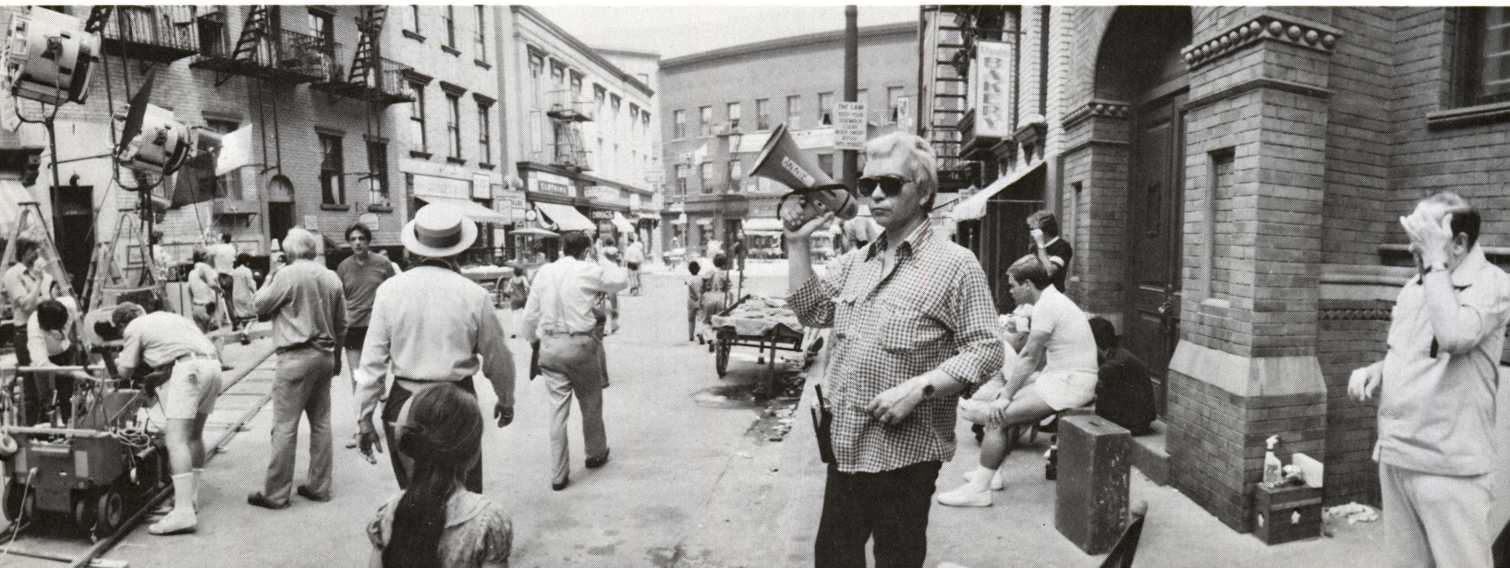
half 45-foot trucks with appropriate pieces, mostly from the studio, to be shipped to New Jersey. They included a $75,000 Aubusson rug, two *porte torcheres* valued at $120,000, a few works of art (very impressive copies of the Mona Lisa and Winged Victory among them), and a specially built 25-foot dining table.

"That house sucked up furniture like a vacuum cleaner," March says.

The White House Rose Garden scene was filmed on the grounds of the college's library, formerly a mansion owned by one of the Guggenheims. This time nature did not cooperate, and the movie's greensman had to wire 6,000 rosebuds individually to plants that refused to bloom in time.

Continued on Page 621

Wide-angle view of the tenement street set built on the backlot of the Burbank Studios for the filming of ANNIE. Constructed as a permanent set, it utilized some 250,000 board feet of 2x4s and 2x6s, as well as 125,000 square feet of plywood wall surface, 400 cubic yards of concrete, 38,000 square feet of fiberglass and resin bricks, $14,000 worth of glass, and 58 telephone poles anchored in concrete to keep the whole thing from blowing over.



"I can remember if you dropped a filter you were in real trouble.

And that's not so long ago" says lighting cameraman David Holmes, B.S.C.

"But it doesn't happen now."

Says former lighting cameraman and founder of Lee Filters, David Holmes. David has added his experience to the development of their plant in Andover, U.K.

Glass breaks, resin doesn't. These are the new type of filters now made at Lee. How they do it is their secret but you don't have to replace a filter if you drop it. And don't forget that Lee Filters supply the majority of the world with the best range of colour media filters.

The best stock and laboratory control. ICI digital colourimeters, Beckman spectrophotometers, the new most up to date, custom built, Dixon coating machine providing even finer quality filters which are unparalleled in the industry. All housed in the most modern plant in the world. Ask David or write to Lee Filters and find out more about "what doesn't have to happen now."

LEE FILTERS

Lee Filters Ltd., Walworth Industrial Estate, Hampshire, SP10 5AN. England.
Tel: Andover (0264) 66245 Telex: 477259

BEHIND THE CAMERAS FOR THE FILMING OF "ANNIE"

A cinematographer's account of photographing a "first" musical that cost $35 million, while working with one of the industry's greatest directors

Richard Moore, ASC who was a co-developer of Panavision and has been a Director of Photography since 1967, recently completed work on ANNIE.

While ANNIE, with its $35-million budget and its promise of enormous audience interest, is Moore's largest film, his previous works include THE LIFE AND TIMES OF JUDGE ROY BEAN, SOMETIMES A GREAT NOTION, WUSA, WINNING, MYRA BRECKINRIDGE, THE REIVERS, WILD IN THE STREETS, and THE WILD ANGELS.

In his question and answer session with *AMERICAN CINEMATOGRAPHER*, Moore touched upon a number of subjects, from his impressions of working with John Huston to his former association with Panavision:

QUESTION: How did "Annie" differ from other films you've worked on? Did it differ in any way?

MOORE: I suppose the most obvious thing is that it was the biggest budgeted film by some measure than anything I had done before . . . the size of the crew, the length of the schedule, the scope of the sets.

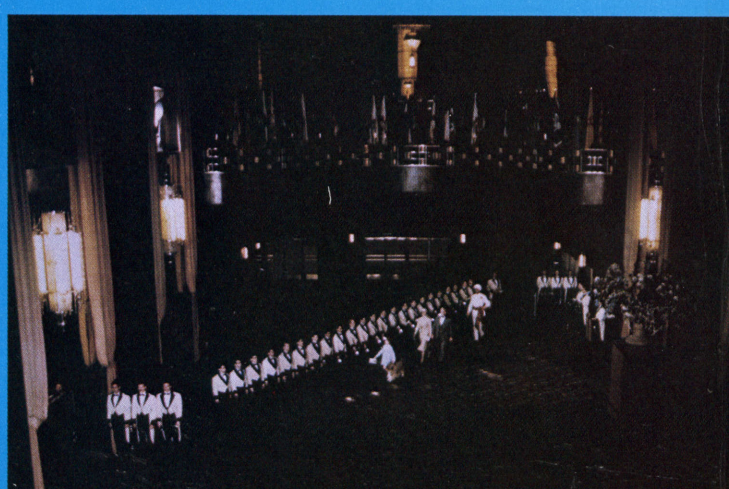
QUESTION: How about your camera crew? Was it a different size camera crew than you would ordinarily use?

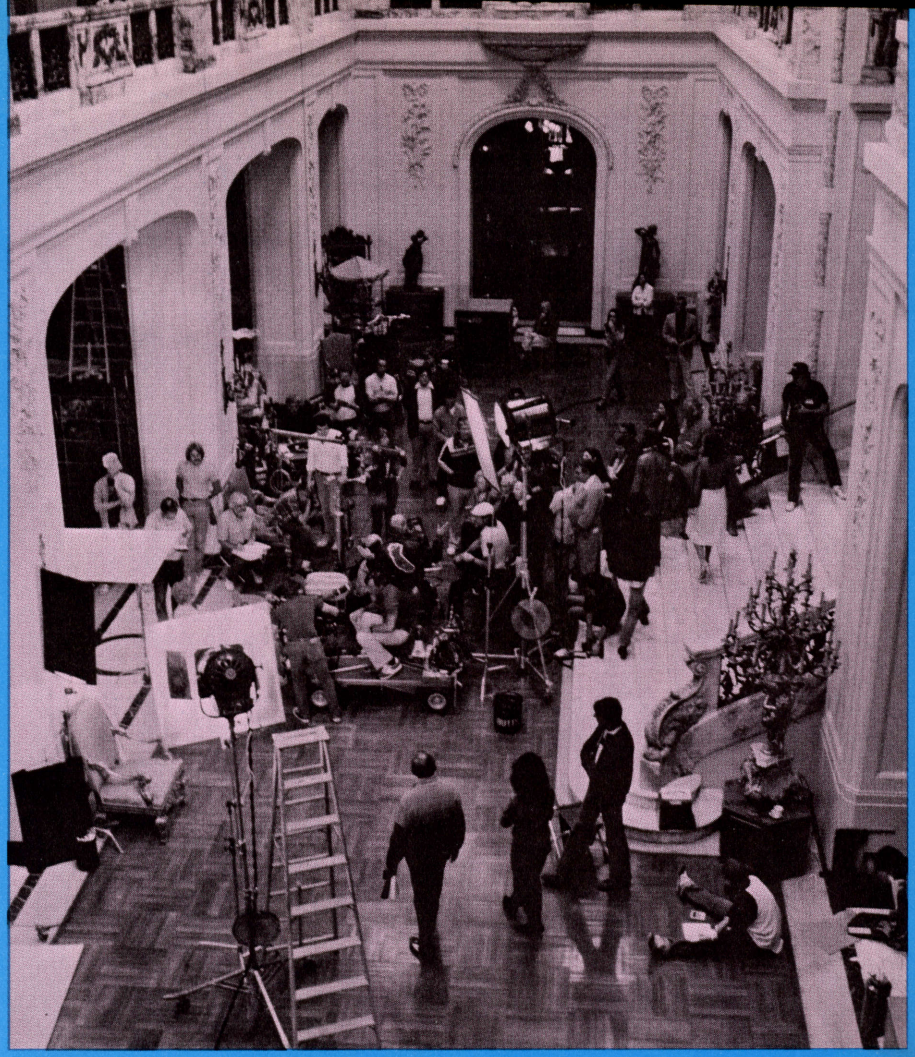
MOORE: Well, not really, because as you know, you always go with the "essential" crew comprised of the Director of Photography, an operator, and a couple of assistants, at least. And then, of course, many big shows involve the use of a second unit camera crew that's commissioned to pick up shots that the first company doesn't have time for or the need to do themselves. In addition, there is the age-old mockery of hiring a standby crew when in another local's jurisdiction, like we did when shooting in New York and New Jersey. It's ridiculous. And finally, the crew grows in size when more than one camera is used on any given shot . . . which wasn't often.

QUESTION: I see. But on a picture as large as this do you feel more responsibility or more pressure on you in that sense?

MOORE: No, it doesn't matter what the budget of the film is, there is a high level of professionalism that motivates a cameraman regardless of the size of the project. I feel, therefore, more of an opportunity, rather than pressure, to do something special photographically in a show with this kind of resources, as opposed to some low-budget films that I may have done in the past. But certainly there's the same drive to deliver the very best image under the circumstances regardless of

(LEFT) ANNIE Director of Photography Richard Moore, ASC was one of the original developers of Panavision, together with Robert Gottschalk. The two men started the company by manufacturing anamorphic projection lenses for CinemaScope in the backroom of a Westwood camera shop. Moore sold his interest some years ago to become a cinematographer. (RIGHT) Director John Huston. ANNIE was his first musical. (BELOW LEFT) Albert Finney, as Daddy Warbucks and Aileen Quinn as Annie dance in the finale. (RIGHT) The mammoth lobby of the Radio City Music Hall soaked up light like a sponge.





The main gallery of Daddy Warbucks' mansion was lit with a large bank of 1000-watt quartz lights mounted in oversize "chicken coops" hung from the ceiling. (RIGHT) The full crew prepares to film a dolly shot in the main gallery.

the size of the show.

QUESTION: How was it working with John Huston?

MOORE: Well, for me it was an absolute delight. I first met John when he was acting in MYRA BRECKINRIDGE, and I was the Director of Photography. It was an incredible production. The internecine warfare between the producing entity and the director and the stars was really fierce. And I was sitting in a kind of pleasant no-man's land watching all the bombardment going on. Huston, of course, is a very collected and calm sort of person and stayed out of the fracas, so he and I became acquainted during that difficult time. It was a few years after that that I shot a film called THE LIFE AND TIMES OF JUDGE ROY BEAN, which John directed.

QUESTION: How did that come about?

MOORE: Paul Newman and his producer, John Foreman, wanted me to work with Huston. I had already shot three films for Newman/Foreman, and they knew that John and I had a good rapport from our association on MYRA BRECKINRIDGE. After JUDGE BEAN I scouted with John in Turkey for THE MAN WHO WOULD BE KING, but the picture finally went with British financing, so I was out. The same thing happened when John directed THE MACKINTOSH MAN.

Various of the 130 rooms inside the former mansion of F.W. Woolworth president Hubert T. Parson were used in the filming of ANNIE. Now the administration building of Monmouth College in West Long Branch, N.J., the mansion was rented for the filming and was furnished with several huge truckloads of ornate furniture, most of it brought in from the studio in Hollywood.

A permanent new tenement street set, closed at both ends, was built on the backlot of the Burbank Studios for the filming of ANNIE. Moore had the studio build a very large silk that could be drawn across the top of the street within 10 minutes by means of cables, in order to insure soft light on a bright day. (BELOW) The other end of the street.

QUESTION: Does Huston bring something to a film that other directors may not?

MOORE: Absolutely. John Huston possesses the two qualities I most admire in a director—an intellectual, talented mind, tempered with genuine humility. It's a rare combination in this business, I assure you. Add these qualities to a long career of directing many of the most noteworthy films ever made, and you have a man who comes to the set "prepared" in the best sense of the word. He's not flamboyant, doesn't want to do his own hand-held shots, and only rarely does he raise his voice, because I believe he prefers to place his confidence in the crew and let them do the shouting. What Huston uniquely brings to a production besides a good eye for camera movement, lighting, acting, art direction, et al, is "mature judgment." No director active in the industry today has a track record that approaches his. And he's an innovator. Witness MOULIN ROUGE and REFLECTIONS IN A GOLDEN EYE. We tried for a special look in JUDGE ROY BEAN, but were only partially successful because the releasing company wanted conventional-looking release prints.

QUESTION: What about ANNIE?

MOORE: The philosophy in ANNIE was that we didn't want to do anything that would detract from the songs and jokes; I mean as opposed to an aciton film or a heavy dramatic piece where the photography can get very moody. This show we wanted to make bright and bouncy, particularly in the Daddy Warbucks mansion. The orphanage we wanted to look funky, but still lovable.

QUESTION: In the sense that John then gave you a lot of room, is that an ideal relationship between a director and a cinematographer?

(LEFT) Rehearsing a scene inside the White House set, with an actor playing President Franklin D. Roosevelt in wheelchair. (RIGHT) Moore in confab with Albert Finney, Aileen Quinn and Bernadette Peters prior to the shooting of a scene. Adopting soft light as a style for the production, Moore says that there was not a light on the picture that did not have some sort of diffusion in front of it, including "tracing paper or shower curtain".

(LEFT) In the merry musical number of the finale, Annie and Daddy Warbucks dance in front of the mansion, the facade of which was lighted (in celebration of the Fourth of July) with 10,000 25-watt bulbs, while skyrockets burst overhead, (RIGHT) The mansion's elaborate indoor swimming pool provided a ready-made set for a pool sequence involving Annie and Daddy Warbucks. Use of the mansion provided a great deal of production value at relatively low cost.

MOORE: I certainly think so. Of course, there may be cinematographers who are not so sure of what they want to do and rely on heavy guidance from the director. But speaking for myself and many other cameramen that I know, the more that I'm allowed to express my feelings or artistic instincts in the matter, the more gratifying it is.

QUESTION: What is the most common problem that a cinematographer would have with a director? Would it be the director leaning over his shoulder too much?

MOORE: No, I think the most frustrating thing for me is a director who can't articulate his thoughts, or who doesn't really know what he wants and can tell you only after you've shown him what you thought he wanted . . . and it turns out not to be what he wanted at all. It's maddening and a terrible waste of time. I've worked with only one director who said "shoot it the way you see it and I'll love it." He did, thank God.

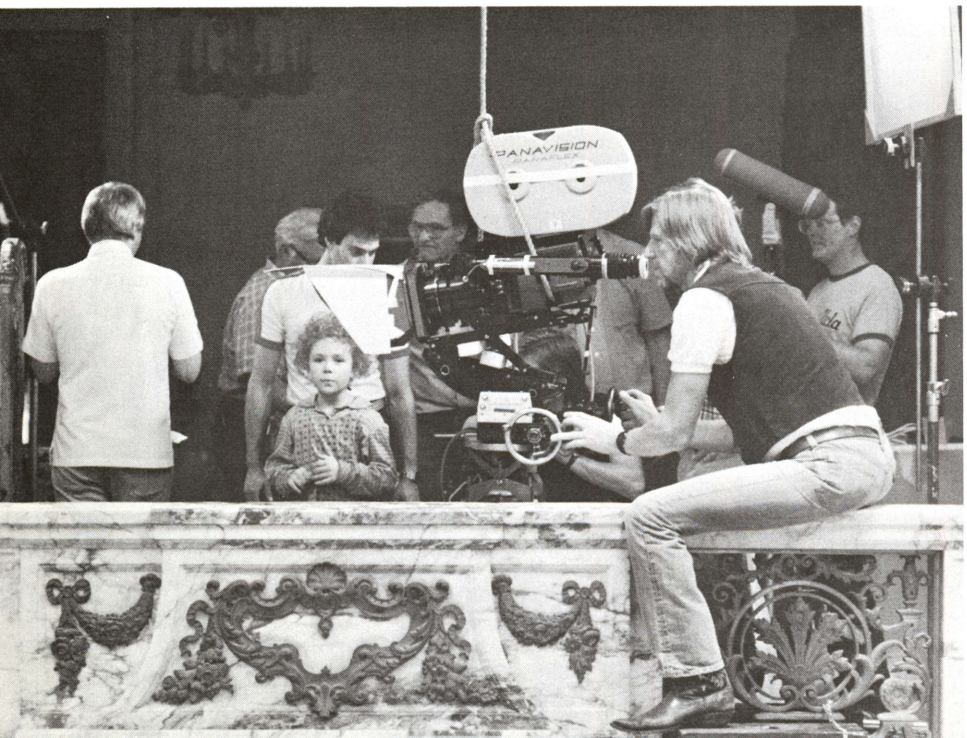
QUESTION: Considering that you don't want to detract from the picture, how do you get your own feelings into the film?

MOORE: I didn't mean to say that there isn't plenty of opportunity to express one's self as the cameraman on a musical. The look of the entire picture, of each sequence, each individual camera setup require careful artistic judgment . . . how to light the set, how to place the camera and move it, what diffusion to use, etc. In most cases, directors employ a certain cameraman, secure in the knowledge that that cameraman will deliver the look they both agree on. And ideally, the cameraman brings fresh, new ideas that

John Huston explains a scene to his actors prior to shooting of a scene in the White House set. (BELOW) Richard Moore first met John Huston when he photographed MYRA BRECKENRIDGE, in which Huston played a role. He later photographed THE LIFE AND TIMES OF JUDGE ROY BEAN, which Huston directed. Their close rapport from these projects carried over to ANNIE.

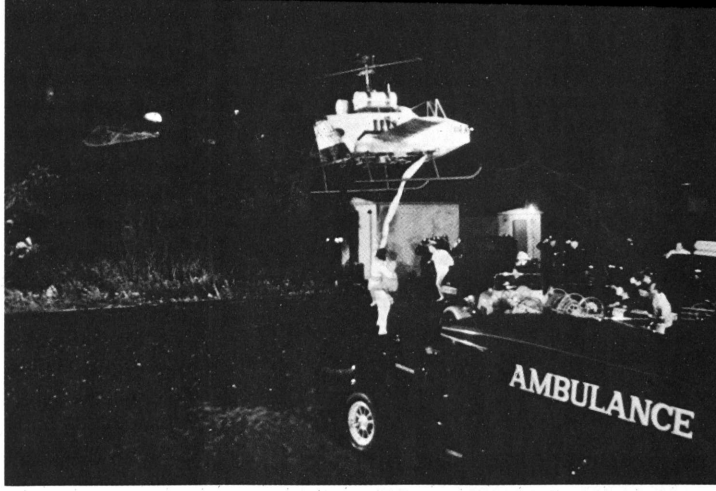
(LEFT) Huston and Moore discuss the filming of the sequence in which Daddy Warbucks and Annie, in Warbuck's autogyro, land in the White House Rose Garden for a visit with President Roosevelt. (RIGHT) The vintage autogyro used in the film was a faithful replica of this unusual aircraft, which was a forerunner of the modern helicopter.

Moore lines up a shot on the balcony of the mansion. ANNIE was his first musical as Director of Photography. He found it different from previous assignments mostly in terms of its expanded scope and the size of the sets, plus the need to keep the visual style basically light and cheerful.



hadn't even occurred to the director. Also, a lot of the cameraman's area of creativity has to do with the art director or production designer in terms of the way sets are constructed, decorated, and colored. And, of course, the cameraman has total reign in terms of what sort of equipment he wants to use . . . lights, dollies, cranes, cameras, lenses, diffusion, that sort of thing. For example, one of the more dramatic things that happened when I came on the show was having the studio and Huston reconsider their original decision to shoot the film in 1:85 . . . you know, just regular wide screen photography. I knew Ray Stark wanted prints in 70mm for the major theaters, and I suggested very strongly that we shift to anamorphic (or "squeezed") photography, so that a superior 70mm release print could be brought out of that. Well, that's one of the functions of the cameraman, to make these recommendations so that a better product results.

QUESTION: I know you started late on this film. Was that a problem?



(LEFT) Huston gives direction to Carol Burnett, playing the bad-tempered matron of an orphanage. (RIGHT) Punjab and Annie dangle from helicopter, after he has rescued her from the top of the bridge. The sequence was shot near Passaic, N.J., with the second unit shooting the long shots and the first unit matching closer shots back at the studio.

MOORE: Yes, of course, but nothing we couldn't solve. There were certain changes that I asked for on the sets that were being built in Hollywood while we were still shooting in New Jersey. The orphanage sets were being constructed with solid ceilings that couldn't be removed to facilitate lighting. This was changed. I asked that a number of walls be made wild, particularly in view of the fact that the entire orphanage was, to begin with, sitting on seven-foot risers. It would have made the shooting a lot more difficult and time-consuming. So I had the opportunity to correct things like that. I asked that a huge silk be installed over the new tenement street set, a silk that could be pulled over the set or withdrawn in a matter of 10 minutes, allowing for soft light in case there was a very harsh sun coming down, or to withdraw in case of overcast, and so forth.

QUESTION: Was there anything unique in your approach to filming "Annie"?

MOORE: Ah, now comes the great temptation to lay on a heavy trip, like I've heard so often in interviews of this type. The answer to the question is: not really, except that not one *light was used that didn't have some type of diffusion on it. We were using, of course, Panavision equipment (the Panaflex camera), which is our basic tool in the trade today. I came to rely heavily on one particular zoom lens that Panavision manufactures that looks very sharp in most situations. Of course, at low light levels it's necessary to go to faster, fixed focal-length lenses. But it turns out that Huston likes to use subtle zoom*

NEW

TECH CAMERA RENTALS INC.

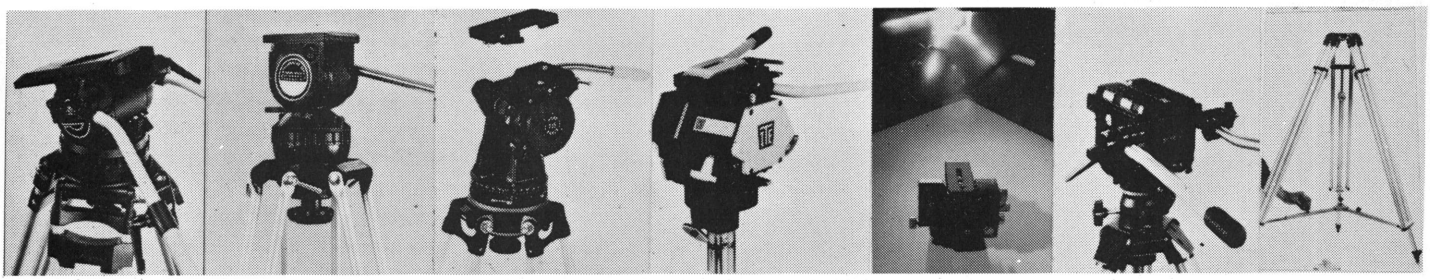
TECH CAMERA

The Company For Craftsmen

6370 SANTA MONICA BLVD.
LOS ANGELES, CA. 90038

213-466-3238

TRIPODS AND FLUID HEADS FOR CINE AND VIDEO CAMERAS



SACHTLER
VIDEO 25 OSCAR HEILER RONFORD ITE H-10 O'CONNOR 30 BOGEN LISAND

YOUR REACH SHOULD EXCEED YOUR GRIP

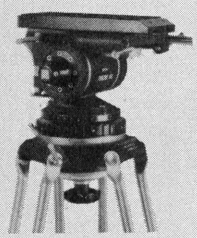
New From Procam

The FTG (Oskar Heiler) Fluid Heads

Prices 40 to 50% Below The Competitive German Import!

Now, there's no reason to pay top dollar for a quality German fluid head anymore! ***Procam, Inc.*** brings to America the ***FTG Fluid Heads.*** Precision engineering by Oskar Heiler and featuring his now-famous dial adjustment for pan and tilt pre-selected tension settings.

Hydro OH-6 Special
Features 6 adjustable pan and tilt tension settings. Sliding camera plate for easy balancing. Quick release camera mount. For cameras up to 50 lbs.



Hydro 120
For studio cameras up to 150 lbs. Adjustable camera plate. Fluid or free pan. Full 80° tilt in either direction.

The 3003
Economically priced. Features 3 adjustable pan and tilt settings. For cameras up to 25 lbs.

Also, a full line of aluminum legs, triangles and accessories are available. Call, write or visit our Hollywood showroom.

PROCAM INCORPORATED

905 North Cole Avenue
Hollywood, California 90038
(213) 464-2125

Sole distributor for FTG (OSKAR HEILER) Fluid Heads for the North and South American continents.
Exclusive West Coast representative for AATON CAMERA SYSTEMS.

moves quite a lot, and so do I. I would call them "optical dollies," wherein, in conjunction with a camera move, or an actor's move, the focal length is drifted either tighter or looser to accommodate the shot, and it facilitates a fluidity of camera movement that is much more difficult to achieve if you're using a fixed focal-length lens. I especially like to use the zoom if the shot starts, for example, with a full-shot utilizing the wide-angle end of the lens, and then subtly zoom in to a closeup of an actor. Now the lens is at its longer focal lengths, which is ideal for portraiture.

QUESTION: Was your reliance on the zoom unique?

MOORE: Somewhat, since I stayed with a zoom lens quite a lot more than other cameramen would be inclined to do, and that was due to the reinforcement that I was getting from Huston in the type of shots that we'd go for. He prefers flowing shots without having to intercut. He's known as an economical director in the sense that he doesn't do a great deal of coverage, like certain other directors do – back and forth, over-shoulder, over-shoulder, single, single – that sort of thing.

QUESTION: What is his emphasis?

MOORE: Well, he likes to design. We would start with a shot which appeared to be fairly simple, you know, and then as the actors would bump their elbows against the props and get a better feel for the scene, we could see a way to extend the shot . . . to continue the movement . . . and it would turn out to be a very elaborate shot finally, and that's what we would go for. That would please Huston, and I love it too. It makes shooting a lot more fun, because otherwise you feel like you're doing a television show, where you've got to get so many setups per day, and the best way to do it is to set the camera here, shoot a few lines of dialogue, move it over there, shoot some dialogue. That's the way you get "page count."

QUESTION: Why did you think it was advisable to go to anamorphic Panavision?

MOORE: As I've already mentioned, Panavision equipment is state of the art. But the decision to go to "anamorphic" Panavision was for the purpose of mounting this super-expensive, upbeat production in the brightest, sharpest manner available. The anamorphic system utilized every square millimeter of negative (and print) available in 35mm cameras. Therefore, as opposed to the "cropped down" wide-screen prints obtained from non-anamorphic negatives, ANNIE will be released in full-frame anamorphic 35mm prints for neighborhood theaters, and 70mm blowup prints for the flagships. They will be spectacular.

QUESTION: Your use of TV monitors on "Annie" – was this a first for you?

MOORE: Well, I had been using them for quite some time in TV commercials I've shot and directed, but this was the first time I used a TV monitor on a feature. It was a great aid, obviously. Mr. Huston feels that getting up on a crane and so forth, to look through a bloody eyepiece, is better left to the cameraman. At the same time, by looking at a sharp 19-inch black-and-white monitor he sees exactly *what the camera sees anyway. And I adopted the philosophy that after the shot had been designed and had been rehearsed and I was satisfied with looking through the camera, then I would come down and sit alongside him and watch the actual filming, and we would see "instant dailies", as far as we were concerned. And, if there was anybody else around, like Ray Stark or Carol Sobieski, the writer, or whoever, Huston would listen to their comments, up to a degree, make his decision, and move on. I think it's a terrific tool. Yet there are a lot of people who don't want TV monitors around. They feel that suddenly you've got committees casting votes after every take. It doesn't have to be that way.*

QUESTION: Is that the only negative – that other people are being automatically brought into it for their reaction?

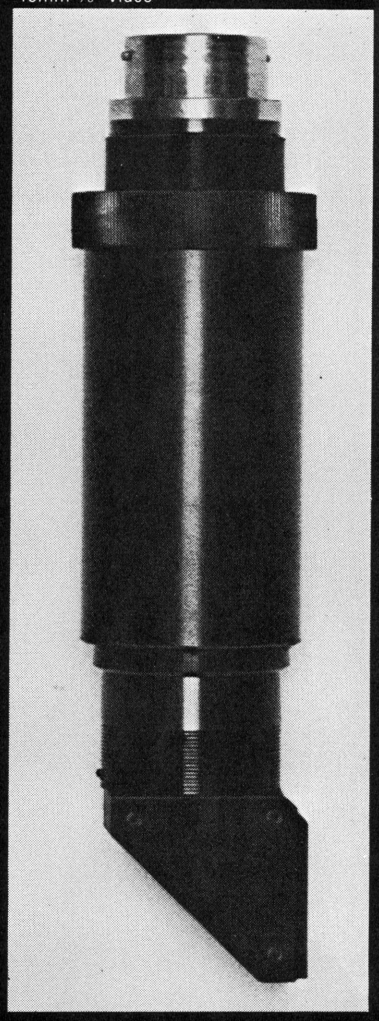
MOORE: As far as I know. And that can be handled. I mean, if you have the monitor there and a couple of the key people standing around you, you ask everybody else to get the hell out, and that's the end of that. Also, you know, there are a lot of times when you go to dailies to look at the previous day's work, and you say, "Goddammit! Man, if we'd just framed a little bit more or sped this up or just racked focus a little sooner, the shot would be just that much better." But you can't go back for things like that. Whereas, with this monitor, you have a very good impression right off the bat as to whether the shot really worked the way you wanted.

QUESTION: Did the monitor help in other ways?

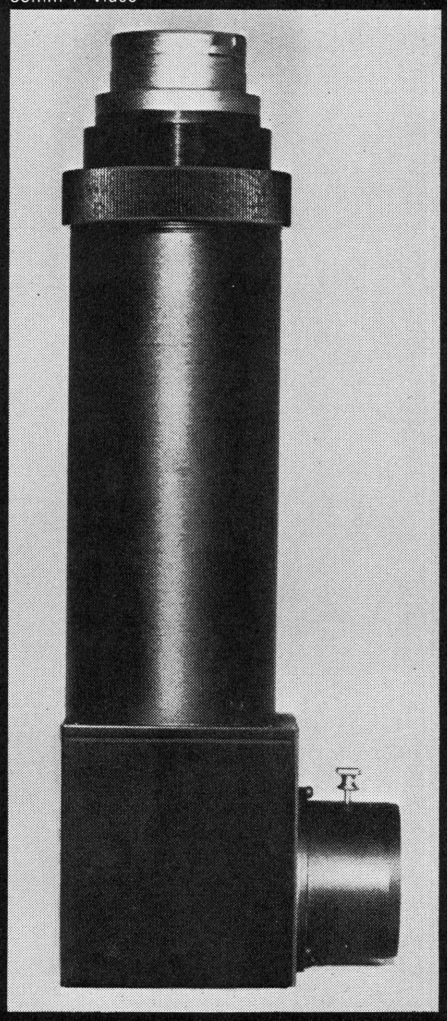
MOORE: Definitely. In all deference to the

new SNORKEL LENS by Hajnal

16mm-⅔" Video



35mm-1" Video



Let your imagination soar! You'll be astonished at what you can do with the Hajnal Snorkel—and how easily you can do it.

Two new, improved models of the patented Hajnal Snorkel lens are now available from F&B/Ceco. Optical performance has been increased, mounting made more versatile, plus—the new lenses have a recommended minimum aperture of T4 with ASA 100 Film, and most video tubes. And you can stop down the prime lens diaphragm from T4 to T22 without any vignetting.

Type 16 accepts "C" mount prime lenses and mounts into 16mm film or ⅔" tube video cameras. Type 35 accepts Arriflex prime lenses and mounts into 35mm film cameras or 1" tube video cameras. Both Snorkels will accept extreme wide angle to telephoto lenses and zooms. Camera end mounts are available for most popular film and video cameras.

The Hajnal Snorkel story is too exciting to be told on one page. Write for our illustrated brochure for all the details and let your own imagination go to work.

F&B/CECO

U.S. Patent #4195922 and others in foreign countries.

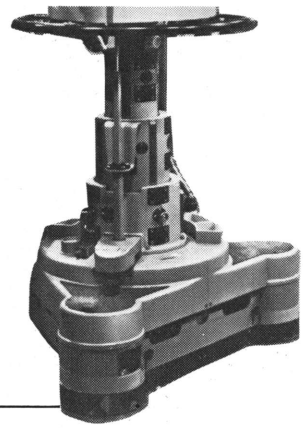
SALES—SOS DIVISION

315 West 43rd Street, New York, N.Y. 10036 Phone: (212) 974-4600 Telex: 12-5333

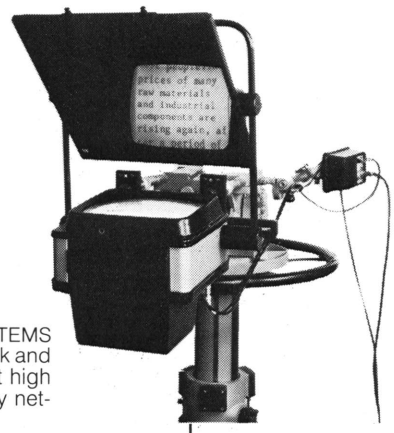
Camera Mart and Listec

What's in the name? Plenty! Listec is the name for quality mounting and monitor prompting equipment, superbly engineered, equipment that has won the Guild of Television Cameramen's award. And Camera Mart is the name that has won the respect of the industry's top professionals for its personalized, knowledgeable concern for every client's special needs. So check out New York's most extensive collection of Listec equipment at Camera Mart. Which unit do you need? You name it, Camera Mart has it. Listec and Camera Mart—two names you can really rely on.

3056 PORTAPED—
A combination self leveling portable pedestal with a built-in pneumatic column for in shot elevations.



3702 FULMAR EXTENDED RANGE PNEUMATIC PEDESTAL
Unsurpassed for stability, heavy weight capacity, finger tip control.



DIGIVISION MONITOR PROMPTING SYSTEMS
A light weight, broadcast engineered, black and white monitor, hood and semi-transparent high quality mirror, weight 22 pounds. Used by network and major broadcasting stations.

The Camera Mart, Inc.
456 West 55th Street, New York, NY 10019 (212) 757-6977 Telex: 1-2078
Sales • Service • Rentals

the camera operator, when there is no monitor there's only one guy who knows what the camera saw during a take and that's the operator. He's a guy who makes a respectable amount of money, but he's got a tremendous amount of pressure on him, because when the director says, "Cut. How was it?" everybody looks at the operator. If he says, "Well, it was O.K.," then everyone goes, "Ummh." In other words, it wasn't perfect, right? The operator's gotta say, "We have to do it again for this reason," and give an intelligent, articulate reason. Or, he's got to say, "It was terrific," because anything in between, no one believes him, and you go to the dailies the next day and you're apprehensive, and sure enough, anything that doesn't look right will look hugely wrong. The monitor eliminates that anxiety.

QUESTION: Had you ever worked with a musical before?

MOORE: No, I hadn't. And I must admit it was not the sort of project that I would have sought out. I don't know why. It's certainly a challenge to do a musical, but it hadn't occurred to me to do one. As a matter of fact, I'd pretty well withdrawn from photographing feature films altogether, because of wanting to be with my kids, of whom I have custody, rather than going off on long locations. And I was drifting more toward directing.

QUESTION: What projects?

MOORE: I directed a feature film in Israel a couple of years ago and I've directed a lot of television commercials. But when this opportunity came along I jumped at it for the chance of working with Huston again. Musicals, themselves, didn't seem to be all that challenging. Well, that's not true at all. They have their own set of problems altogether. And it was a good experience for me. I'm glad I did it.

QUESTION: This was your first musical. From the technical standpoint, what are the big differences in photographing a musical that you have found as compared with a straight drama or comedy?

MOORE: I suppose the scope of production, in the first place – the size of the sets. The practical set that we used in New Jersey was a big, three-story mansion. It was quite a challenge to light it so that the camera could keep very fluid in order to accommodate the musical numbers. A musical, by its very nature, involves a great deal of dancing, so you have princi-

Continued on Page 622

THROTTLE TIME

New Mark IIIC with Varispeed gives you complete speed control.

For the first time ever, you can now run a flying spot scanner at 64 different speeds between 16 and 30 frames per second. Without loss of picture stability or quality.

This new time throttle lets you substantially increase or decrease running speeds... and the viewer will never know the difference.

You can tailor film times to fit programming slots or standard video cassette lengths. Silent movies and archive footage can be replayed at their original speed. And, 625/50 PAL users can at last have true 24 f.p.s. reproduction.

Varispeed is just one of the many welcome options of the MARK IIIC Telecine. Rank Cintel builds in versatility to give you the ultimate in creative post production flexibility, and award winning performance.

Now that we've put a throttle on time, the best just got better.

For more information contact
Rank Precision Industries, Inc.
13340 Saticoy St., Unit F
North Hollywood, CA 91605
213-765-7265
260 North Route 303
West Nyack, NY 10994
914-353-1914
411 East Jarvis, Des Plaines,
IL 60018 312-297-7720

Rank Cintel

RC-282

THE CHALLENGES OF PHOTOGRAPHING "EVEREST IN WINTER"

The opportunity to make the ultimate mountaineering documentary offered a filming challenge of the highest order — one that could not be refused.

(EDITOR'S NOTE: The following article, created especially for AMERICAN CINEMATOGRAPHER, was written by MIKE SHRIMPTON, the Cinematographer of the expedition, with the assistance of notes written by ALAN JEWHURST, Director, and additional notes by GRAHAM ROBINSON, Sound Recordist.)

As the highest point on earth, Everest has a magic that no other mountain possesses. To those who regard mountaineering as an eccentric and dangerous folly it is the only mountain which it makes sense to climb. For the mountaineer who attempts to climb it Everest becomes a compelling and passionate obsession. To a few it is not enough to merely ascend its flanks as others have before them. They have to seek the ultimate challenge.

On the 10th of November 1980, eight of the world's most experienced mountaineers set themselves such a challenge. To scale the 29,028 feet of Everest in winter, without the aid of supplementary oxygen or Sherpas' support. In addition they chose the precipitious West Ridge, and would face jet stream winds of 100 miles an hour and temperatures down to −45°C. They would be climbing at the worst possible time when Everest becomes an icy hell. Their chances of reaching the summit were considered slight. To a mountaineer that was the beauty of the whole concept.

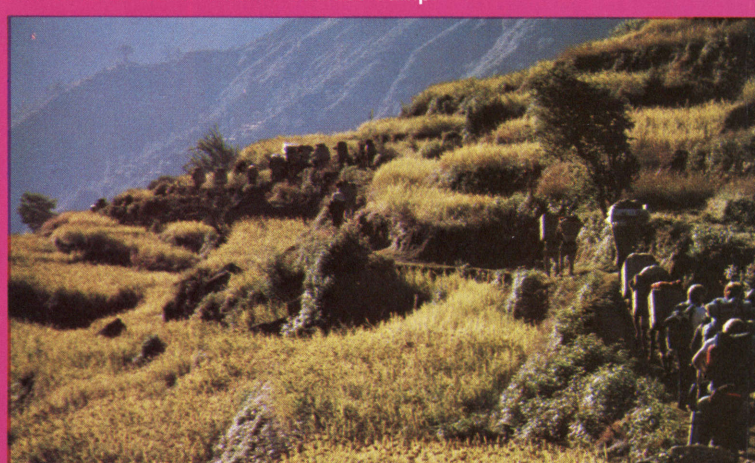
For us an equal challenge. The chance to make the ultimate mountaineering film. Or was it? After producing numerous adventure films over the last few years, we at Chameleon Films of Leeds, became aware that for us we had come to the end of an era. By reputation we had become the best in our field in the United Kingdom, but we were getting bored and required new incentives. Then we heard of the winter attempt on Everest. Were we interested? Yet another attempt on Everest was the first thought, so what? But on closer inspection we began to be impressed. It was to be an attempt to push forward the frontier of mountaineering.

After spending three days viewing Everest films of the past from the mediocre to the embarassingly long and boring we realised that here was, indeed, a film challenge of the highest order. We were not going to fall into the trap of earlier, diary type films which spend half their time "walking in" to the mountain, our main ambitions were to get up high and film the climbers where the action was.

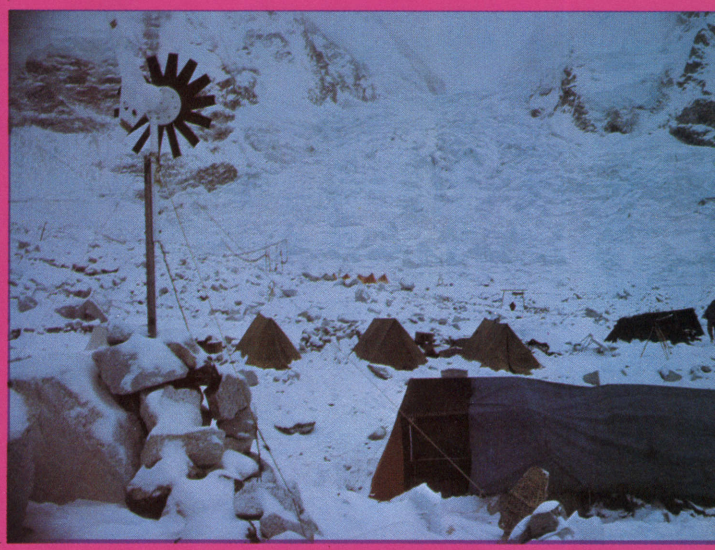
From our earlier films our relationships with some of the climbers was well established. Here was a unique opportunity to integrate entirely our three-man crew with the climbing team to become part of their ambition, and them part of ours. In this way, we hoped to get under the skin of a story of great human endeavour. To portray the suffering and hardship, the arguments and disappointments which inevitably beset climbers and their ambitions in what is probably the most hostile place on earth was a challenge worth pursuing. In fact to make a mountaineering film unlike any other.

From the climber's point of view, Joe Tasker has said in his book, *Everest the Cruel Way*, "We hope that being closely involved in the filming ourselves, it will be *our* film. The most accurate and intimate

(ABOVE LEFT) A climber, looking smaller than a flea, is seen approaching "home", an ice cave at the 20,000-foot level of Mt. Everest. (BELOW LEFT) Kathmandu, ancient capital of Nepal and gateway to the Himalayas, is the traditional staging area for expeditions bold enough to dare the heights of Mt. Everest. (RIGHT) Some of the 150 porters used on the three-week "walk-in" to Base Camp.



(LEFT) The film crew during a break in preparation for filming on "The Hill". (Left to right:) Alan Jewhurst, director; Mike Shrimpton, camera; Graham Robinson, sound. (BELOW LEFT) Filming of "the route" discussion. (RIGHT) Bad weather hits Base Camp. The challenge for the climbers was to scale 29,028 feet of Everest in winter without the aid of supplementary oxygen or Sherpa support.



film of mountaineering that has ever been made."

However, they did have two real concerns. Firstly, "It was a major worry that something might happen to one of the film crew, a concern for their own sakes and for the expedition's as a whole; any accident would seriously affect the morale of the rest of us." Secondly, having "outsiders along, especially ones who are recording your every move and word can be, of course, a conflict in itself and an incentive to reticence. However, given these reservations, every one on the team was keen to cooperate in obtaining the material to make the best possible film."

So in the minds of the people involved, the stage was set. However, agreement over finance was much more difficult to achieve. This was an extremely high risk project in all ways, for the crew and for the equipment, indeed there might not even have been an end product.

In a move more common to the insurance world, the solution was found in spreading the risks over a number of interested parties. This was eventually achieved only two weeks before the expedition departed the U.K. Only then was it possible to gather together the clothing and film equipment necessary to survive the challenge.

Information as to what to expect in frozen isolation at 20,000 feet was difficult to acquire. Never before had Everest been climbed in winter, so on what basis were we to make our preparations?

First and foremost, both personnel and equipment were going to have to function in extreme coldness. Certainly in the order of −40°C and in ferocious winds approaching 100 miles an hour. Because of the altitude with its rarified air, the body was to be subjected to less than half the normal air pressure (sea level). The effects of reduced oxygen supply to the blood are known to be very dramatic. It is the unique combination of these climatic conditions that were to make filming on Everest such a daunting problem.

At high altitude, with less than half the normal weight of air pressing on the body the internal fluids become unbalanced, rather like a slow motion version of "the bends" usually associated with deep sea divers. The disorders which ensue known as Acute Mountain Sickness, that is AMS, can, if left unchecked, lead to pulmonary and cerebral oedema, which can kill in a matter of hours. Given time, the body may, to a greater or lesser extent, adjust to the changing fluid pressures. A gradual height gain of less than 2,000 feet per day towards the end of the "walk in" is the best method of acclimatisation. If AMS does get a hold, however, the only remedy is a rapid descent to lower climes.

At best, headaches, nausea and vomiting, coupled with lassitude and depression, were common problems. At the 18,000 feet base camp 10–14 days was an average period for initial acclimatisation. Thereafter, height gains of 2,000 feet or more can induce a return of the symptoms and an anxious reacclimatisation period occurs for each new level attained. Beyond 25,000 feet adjustment does not occur at all and only short periods of climbing can take place before returning to lower levels. All this medical science may seem out of place here, but without a

(LEFT) The Christmas party at Base Camp. (RIGHT) Approaching the start of the route proper. In the background the famous Khumbu Ice Fall drops 2,000 feet to the glacier. (BELOW LEFT) The director, Alan Jewhurst, takes a sub-zero bath. (RIGHT) A river crossing in the course of the "walk-in". Both personnel and equipment had to function in extreme cold in the order of −40°C and in ferocious winds approaching 100 miles an hour.

functioning body a filmmaker is somewhat limited!

Expedition climbers are constantly reacclimatising over the years and do so much more quickly than first-timers. Consequently we were initially at a physical disadvantage, one which time did little to heal. In hindsight, one can say that the only answer for the filmmaker is to try and achieve an extra couple of weeks in base camp, ahead of the expedition. Or, more probably, take a separate acclimatisation trip just prior to joining the team.

With such a small crew and the attendant risks of being removed from the mountain with AMS, we were very anxious to achieve maximum acclimatisation as slowly as was necessary. This may account for Joe Tasker's early observation that "the film team had been strangely inactive for a while. I began to wonder if they were being affected by the altitude and slipping into a routine which made it seem as if there was not enough time to do anything. Many expedition films fail to succeed entirely on account of this. Just surviving on a daily basis at base camp can be quite exhausting enough."

Despite the fact that AMS is kept at bay through good acclimatisation, the body does, in fact, accumulatively deteriorate with a prolonged stay above 17,500 feet. Such a deterioration can be very significant towards the end of an expedition when the filming effort might well be crucial. The mental condition can manifest itself in poor memory, lack of initiative, fatigue, impaired judgement and lassitude. On the physical front, loss of appetite and weight, diminished work output, visual impairment and increasing lethargy are some of the problems to be expected.

If some of the above difficulties of living for more than two months under low air pressure are new to you, then you may be more familiar with the effects of a lack of oxygen. The figure staggering drunkenly along, apparently weak and fatigued, with a frighteningly asthmatic style of breathing, is symptomatic of muscles and brain partially starved of oxygen. Hand-held filming in such conditions of breathlessness is extremely unsteady, and even smooth pans and zooms on tripod are difficult to achieve.

It was imperative to have an ultra-lightweight tripod with a head such as the Sachtler and Wolf Hollywood Fluid 7+7, accompanied by carbon fibre legs. At a weight of 4½lbs, with a fluid drive that actually improves as it gets colder, this was an excellent compromise for use both on the mountain and on the three-week, 130 mile "walk in."

However, there came a time when people started talking about ounces, not pounds, and a tripod was out of the question. Even then something was better than nothing and a monopod proved very effective. The simple G-clamp with pan and tilt ball head, more often used for still cameras, was converted for use on an ice axe. Fluid zoom attachments were used on all zoom lenses to smooth out the oxygen starved arm movements. And again, the colder it got, the better the fluid drive performed. (Such attachments are of the nature of a torque converter and are placed between lens barrel and zoom bar).

By the way, we were told that battery

charging with a portable petrol generator in such rarified air is not on unless you are prepared to take along a mechanic to keep "the beast" going, and even then with only minimum performance but maximum pollution. In this day and age there is a much pleasanter solution to the problem, courtesy of the sun and solar panel generators.

Another worrying factor, related to the lack of oxygen, is a greater susceptibility to the coldness of the region, due to the reduction of the body's efficiency in generating its own heat. The use of supplementary oxygen would have been, I am told, rather like the immediate after-effect of a large swig of whiskey when that well-known sense of well-being and warmth surges round the body. In this context alone, it may well be that in the extremes of winter it is not possible to climb Everest without such stimulation. As a matter of fact "whiskey on the rocks" in Base Camp was very effective, but rather more in achievements of a horizontal nature than the vertical!

So, what of the unrelenting coldness for two months on end that makes filmmaking such a daunting proposition and constantly threatens life itself? We are talking of functioning in temperatures on the mountain of −40°C and below. The sort of

Continued on Page 576

NEED SUPERB STOCK SHOTS?

CHECK NATIONAL GEOGRAPHIC'S TWO MILLION FEET OF FOOTAGE FIRST!

Select full-color, 16mm footage from 18 years of National Geographic's award-winning television documentaries.

Shot worldwide • Cataloged for quick, easy access in hundreds of subject categories such as:

Exploration • Undersea World Wildlife • Recreation • History World Lands and Peoples Adventure

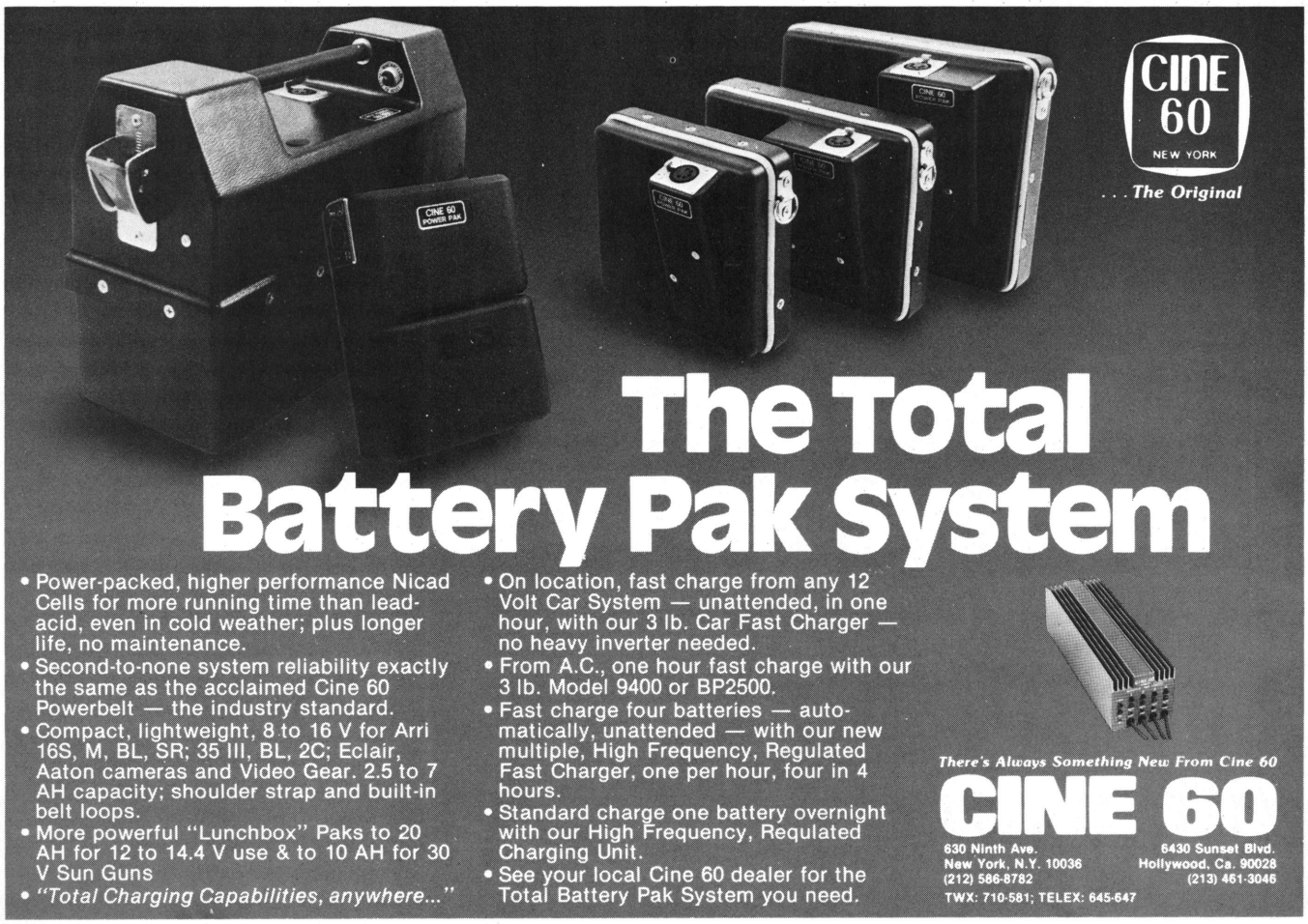
Low-cost preview videocassettes available on ¾" U-Matic.

Six-minute maximum per production.

For additional information and rates, please write or call:

National Geographic Society
Stock Footage Library
Washington, D.C. 20036
(202) 857-7691 Telex No. 892398

National Geographic Society


CINE 60
NEW YORK
. . . The Original
The Total
Battery Pak System
• Power-packed, higher performance Nicad Cells for more running time than lead-acid, even in cold weather; plus longer life, no maintenance.
• Second-to-none system reliability exactly the same as the acclaimed Cine 60 Powerbelt — the industry standard.
• Compact, lightweight, 8 to 16 V for Arri 16S, M, BL, SR; 35 III, BL, 2C; Eclair, Aaton cameras and Video Gear. 2.5 to 7 AH capacity; shoulder strap and built-in belt loops.
• More powerful "Lunchbox" Paks to 20 AH for 12 to 14.4 V use & to 10 AH for 30 V Sun Guns
• "Total Charging Capabilities, anywhere..."
• On location, fast charge from any 12 Volt Car System — unattended, in one hour, with our 3 lb. Car Fast Charger — no heavy inverter needed.
• From A.C., one hour fast charge with our 3 lb. Model 9400 or BP2500.
• Fast charge four batteries — automatically, unattended — with our new multiple, High Frequency, Regulated Fast Charger, one per hour, four in 4 hours.
• Standard charge one battery overnight with our High Frequency, Requlated Charging Unit.
• See your local Cine 60 dealer for the Total Battery Pak System you need.
There's Always Something New From Cine 60
CINE 60
630 Ninth Ave.
New York, N.Y. 10036
(212) 586-8782
6430 Sunset Blvd.
Hollywood, Ca. 90028
(213) 461-3046
TWX: 710-581; TELEX: 645-647

See Us At Booth #1037 NAB.

Just imagine

the pleasures of film making with time marking in clear figures and letters on film and sound track.

Cameramen

You won't waste precious seconds panning to the sound recordist behind you; no focus changes, because no slate.

Sound recordists

You won't have to be at the beck and call of anyone. No need to bang on your microphone every time the camera rolls.

Editors

With a sync mark every second, you won't even care about

the complexities of what happened on location.

Film archivists and historians
You will be able to reconstitute films in their original chronology.

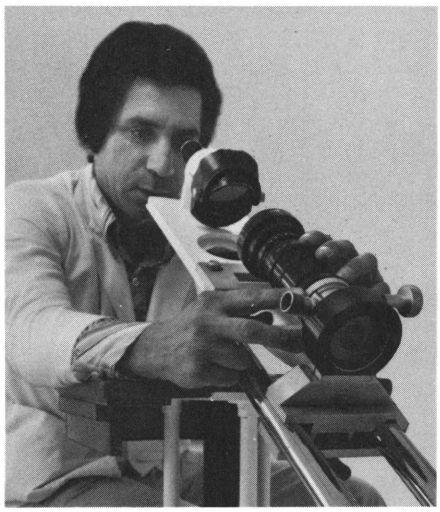
Producers
Shed no more tears on the futile expense of wasted film stock.

Photo : Collection Cahiers du Cinéma

Aäton only

1697 Broadway / N.Y. NY 10019 USA
B.P. 104 / 38001 Grenoble France

angēnieux offers more than quality lenses...



...quality SERVICE

We stand behind our quality products — with quality service. Dedicated professionals using angenieux designed test equipment, spare parts and the skills of experienced factory trained technicians.

You bought superior quality, therefore, we believe you will want superior service. To prove it, please accept our offer for a FREE evaluation of your lens.

Contact the nearest office today.

angēnieux inc.

NH (603) 880-1710
120 DERRY RD., HUDSON, NH 03051

CA (213) 821-5080
13381 BEACH AVE., VENICE, CA 90291

ONT (416) 475-5454
190 DON PARK RD., MARKHAM, ONT. L3R-2V8

"EVEREST IN WINTER"

Continued from Page 573

temperature levels which lie outside the technical specifications of just about every piece of film equipment on the market. (−40°C is the point at which the Centigrade and Fahrenheit scales intersect, thus −40°C = − 40°F, which in terms of the Fahrenheit degrees of frost description of coldness corresponds to 72° of frost).

A useful rule of thumb method of calculating temperatures on the mountain is that for every 5,000 feet of height gained, the temperature drops a further 10°C. As far as the body is concerned or any specially heated equipment any wind present would increase the chilling effect of this coldness dramatically. For example, for exposed flesh in a 40 m.p.h. wind, an actual temperature of −40°C is equipvalent to a temperature of −82°C, that is −148°F. Exposed flesh freezes and dies in such winds at only −25°C. Two cases of frostbite were narrowly avoided in the one instance by thrusting frozen fingers into a mug of hot tea and in the other, a frozen foot into a porridge pot. Nearby, on a less well equipped expedition, frostbite had taken its toll. Apart from hands and feet, faces blackened as unprotected flesh died in the wind. They also lost a life, probably from suffocation in the extreme winds.

I labour these facts about temperature purely to impress on you that nothing can be left to chance. Therefore, every piece of equipment had to be tested in a cold chamber, often found in the biology departments of colleges and universities and the anticipated conditions simulated as accurately as possible. In practice this meant freezing down the moisture free equipment complete with loaded film, over a period of at least 24 hours before any tests could be considered to be meaningful.

However, with the sort of temperatures we were expecting, it was necessary to follow a procedure of preparation of all equipment which had moving parts called *winterising*. This involved the stripping down of the equipment and the removal of all existing lubricants. After a general overhaul the equipment was reassembled using a non freezing lubricant, such as Isoflex PDP 38 or Aeroshell No. 7, between all moving surfaces and bearings. Winterising lenses was particularly important to retain movement of the aperture focus and zoom and control rings. Very important!

All cables, whether for sound or camera were replaced by neoprene cables, as at around −40°C rubber cables snap with a resulting breakdown of insulation properties.

Perhaps the most important element in preparation for this type of assignment is time. In our case we had approximately 14 days, which resulted in a feverishness not to be recommended. We met the deadline only because all the equipment was coming from one rental house, Samuelsons of London, and they were a large enough organisation to assign at least five technicians to work non-stop on the preparing and testing of the chosen equipment.

Obviously the decision as to the main camera was crucial. It had to be well balanced and easily handleable. The film parts should be free from tight curves to reduce unnecessary stresses on fragile film; the mags had to be easy to load and of the snap-on variety to help frozen fingers cope quickly.

The Himalayas are a remote, dry and dusty region. The camera would have to be robust, and be such that it was possible to effect simple repairs and internal cleaning operations, including replacement of the motor and the electronic circuit board which control modern cameras. Susceptibility to hairs, dust and scratching around the gate had to be taken into account. A bright viewfinder was going to be essential for shooting in unlit conditions in ice caves and tent interiors. Most importantly of all, of course, it had to run to speed at −40°. On all counts except the last, my normal everyday Aaton 7 scored highly. However, when it came to the cold chamber tests, after the winterisation process had taken place, we found that −25°C was the temperature around which slow running began.

In the constant pursuit of quieter cameras, manufacturers make bearings with closer tolerances out of synthetic materials. This makes the modern camera more vulnerable to extreme coldness. Most cameras can meet a specification of around −20°C, which is the temperature of the average domestic freezer. But for temperatures twice as cold as this the camera has to be returned to the manufacturer's workshops for the fitting of special bearings with enlarged tolerances, a very expensive and time-consuming operation.

In the time available to us this was just not possible, but the modular construction of the Aaton did allow for a unique solution to the dilemma. Miniature heating elements were fixed directly adjacent to the bearings. In this way, with a little pre-heat time, the resistance of the bearings could be lessened, allowing for easier starting up of the camera and subsequent running.

Continued on Page 593

Introducing Electronic Cinematography

Ikegami takes the film concept, cinematography, and makes it a video reality. And what makes this possible is the Ikegami EC-35 electronic cinematography camera. It looks, handles and performs like a 35mm cine camera. So now you can shoot film-quality television productions on video tape instead of film... faster, easier and at lower cost.

The unique optical system accepts a variety of prime and zoom lenses designed by Canon and Fujinon. And, because the lens ideas come from 35mm cine cameras, you'll find T-stops as well as familiar viewing angles.

To bring out the best in the unique optical system, advanced electronic circuitry is employed. For example, a specially designed FET preamp, used in conjunction with 2/3" low-capacitance diode-gun Plumbicon* tubes, operated in a high voltage mode, deliver an extra-ordinary S/N of 57 dB. The EC-35's ability to compress highlights while retaining detail, combined with a full complement of operational automatics, make it probably the best video camera available today.

©NATAS/ATAS

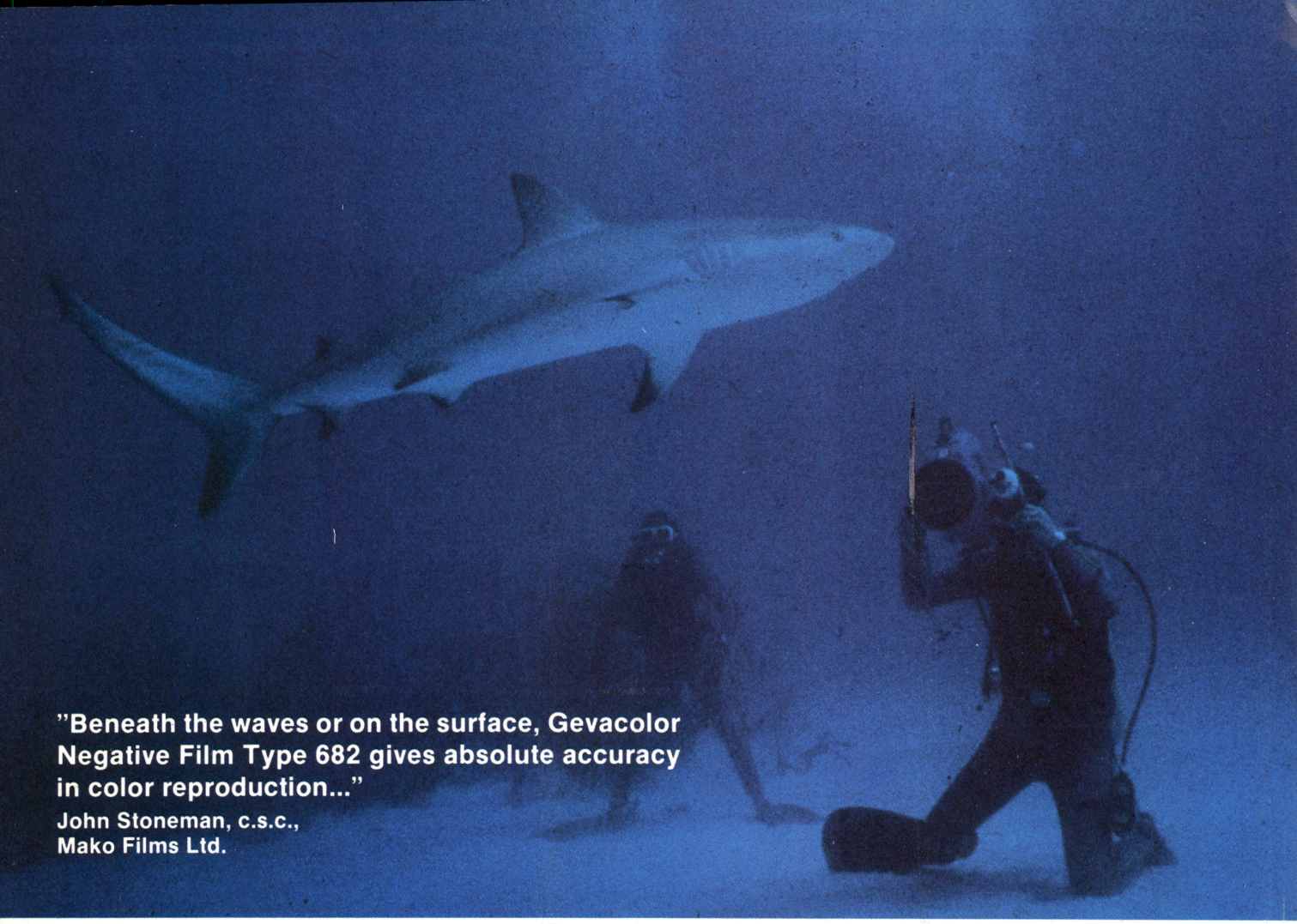
As for handling, the EC-35 is very similar to a 35mm cine camera. On the tripod or off, it lets you use film techniques and lighting. And you'll find familiar features like a matte box, and follow-focus mechanism. What's more, the EC-35 utilizes the Emmy-award winning digital techniques that assist in the adjustment of routine daily functions. So you can spend more time shooting.

For a demonstration of electronic cinematography, contact Ikegami.

Ikegami EC-35

Ikegami Electronics (USA) Inc., 37 Brook Avenue, Maywood, NJ 07607; (201) 368-9171
Northeast: (201) 368-9171 ☐ **West Coast:** (213) 534-0050 ☐ **Southwest:** (713) 445-0100 ☐ **Southeast:** (912) 924-0061 ☐ **Canada:** (201) 368-9179

*Registered TM of N.V. Philips



"Beneath the waves or on the surface, Gevacolor Negative Film Type 682 gives absolute accuracy in color reproduction..."
John Stoneman, c.s.c.,
Mako Films Ltd.

Photo : Barry Parker

John Stoneman, c.s.c., Mako Films Ltd.
Photo: Sarah Stoneman

John Stoneman, c.s.c., is Canada's leading underwater film maker and his multi award winning documentaries have gained him world recognition. He believes that much of his success has come from his careful attention to both the subject matter of his films and also the important technical aspects that support them.

In particular he singles out the film stock that he uses, Gevacolor Negative Type 682, as one of the major factors for his success in this demanding and specialized field.

"Gevacolor Type 682 has proven to be totally reliable for me, even in the most adverse conditions. On our documentaries we can find ourselves on locations that range from countries with high temperatures and excessive humidity to sub-zero arctic temperatures. We are always near salt water but no matter what the conditions, we have always found Gevacolor Type 682 to be totally reliable and trouble free."

Accuracy in the visual interpretations of the film is of major importance to John Stoneman, who is a very demanding cinematographer :

"Whether we are filming beneath the waves or on the surface, everything has to look right. I demand absolute accuracy in colour reproduction and Gevacolor Type 682 definitely does it perfectly. Colours are prone to be more real on this film stock."

"Another major factor with this film stock is its consistency. On one location, where we were miles from anywhere, we were

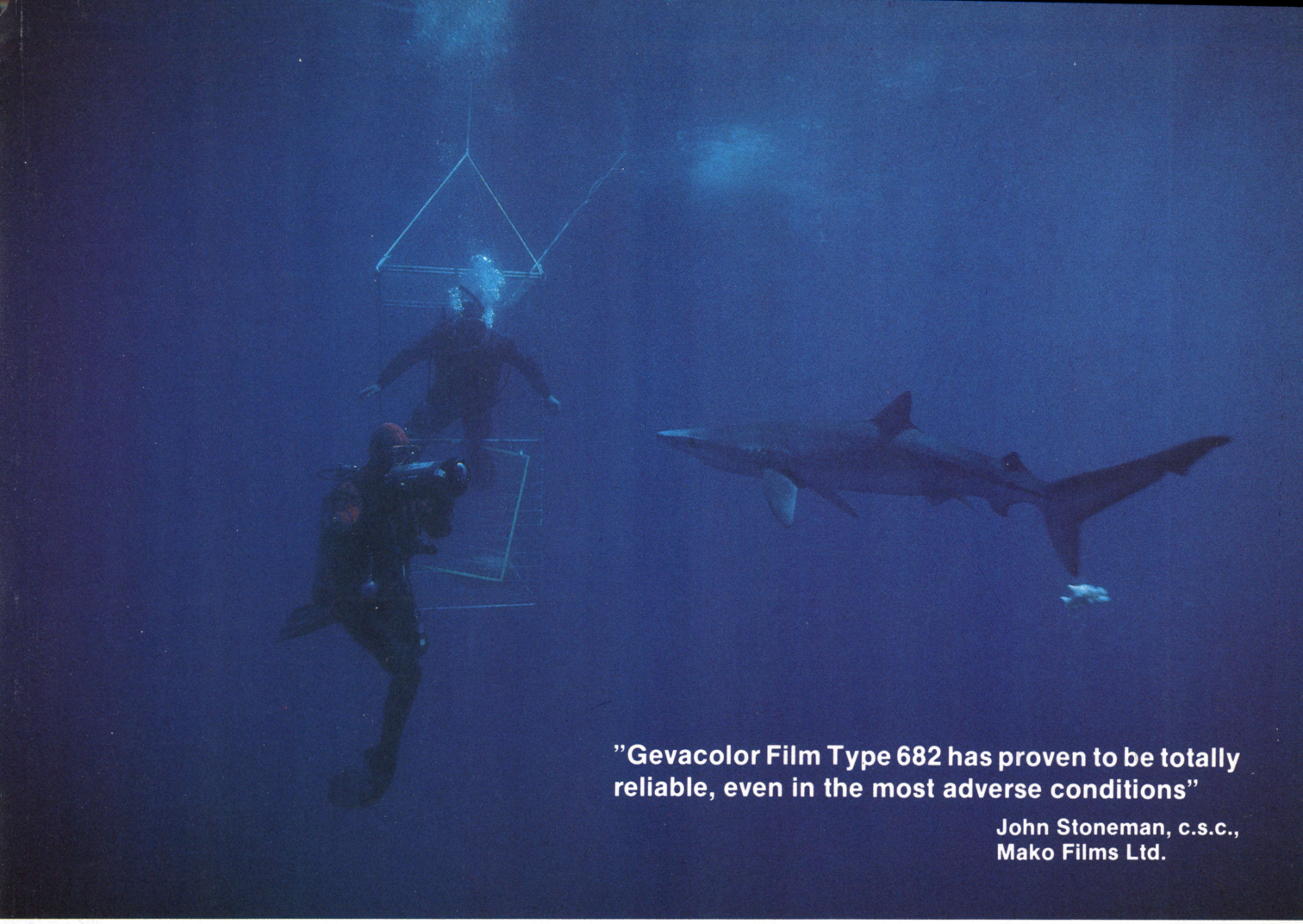

"Gevacolor Film Type 682 has proven to be totally reliable, even in the most adverse conditions"
John Stoneman, c.s.c.,
Mako Films Ltd.

Photo : Chuck Nicklin

forced to mix emulsion numbers. I defy anyone to tell the difference."

As a producer/director and president of Mako Films Ltd., Toronto, which is one of the most prolific of all the documentary companies that specialize in underwater film, Stoneman is keenly aware of the problems that can arise in post production.

"One area that I used to be constantly worried about with our films was during the final stages of post production when the negative is being handled regularly by both the negative cutter and the lab. It was not uncommon to see tremendous deterioration of the negative in the first check print. Now, Gevacolor Type 682 seems to be a much hardier stock and less liable to deteriorate. This is a major plus for any producer."

John Stoneman, c.s.c., is presently engaged on what he considers to be his most important film to date, a one hour television special on whale behaviour.

"The ocean is a very important part of my life and I have always wanted to produce a film about the gentle giants of the sea, the great whales. Now at last, I am able to accomplish this and with a film that is as important as this one is to me, it is satisfying and reassuring to know that I will be photographing it on a film stock that will record it accurately, Gevacolor Negative Type 682."

AGFA-GEVAERT N.V.,
B-2510 Mortsel (Belgium)

SYSTEMS FOR PHOTOGRAPHY • MOTION PICTURES • GRAPHIC ARTS • RADIOGRAPHY • VISUAL ARTS • REPROGRAPHY • MAGNETIC RECORDING

In the U.S.A.: Agfa-Gevaert Inc.
275 North Street, Teterboro, N.J. 07608
Telephone: (201) 288-4100

In Canada: Photo Importing Agencies Ltd.
69 Viceroy Road, Concord, Ont. L4K 1E7
Telephone: (416) 667-0700

In Great Britain: Agfa-Gevaert Ltd.
Great West Road 27
Brentford, Middlesex, TW8.9AX
Telephone: 01-560-2131

In Australia: Agfa-Gevaert Ltd.
P.O. Box 48, Nunawading, Vic. 3131
Telephone: (3) 878-8000

GEVAERT AGFA-GEVAERT

IMAX AND "THE ERUPTION OF MT. ST. HELENS"

By GEORGE CASEY

A natural cataclysm on a gigantic scale provides a fitting subject for the world's largest film format—and shakes up the film crew, too

Weekend of May 18, 1980. Despite a turmoil of instincts, it seemed like a perfect weekend to drive to San Diego with my wife, Ellen, escaping our three children and a long regimen of work.

Yet my instincts tugged me toward a swelling volcanic mountain in southwest Washington State, which I was convinced was about to erupt. The mountain, a long-dormant volcano in the Cascade Range, bore the deceptively serene name of *Mount St. Helens*.

I had, in fact, arranged to fly to St. Helens that weekend to film "before" footage of the mountain. But the special Imax camera I intended to use was tied up in the middle of a complex, multi-pass shot on our shooting stage. San Diego won; but I would learn again not to mistrust my instincts in working with volcanoes.

Anyway, a beautiful Sunday morning in San Diego. Also at St. Helens . . . a beautiful, Pearl Harbor-sort-of Sunday morning.

I have since often wondered where I would have been that Sunday morning at St. Helens had I followed my instincts, when St. Helens erupted in the cataclysmic horizontal blast that levelled 150 square miles of timber and killed 63 people who had ventured too near. Yet, I am certain I would not have been #84. I have a childish and mystical Irish notion that I have a special thing going with volcanoes (when I trust my instincts), and that I would more probably have luckily been airborne in a camera helicopter at the fateful hour, recording the extraordinary event in the world's largest film format. Positive thinking.

Some remarkable personal luck in filming volcanic eruptions in Hawaii several years before (*American Cinematog-*

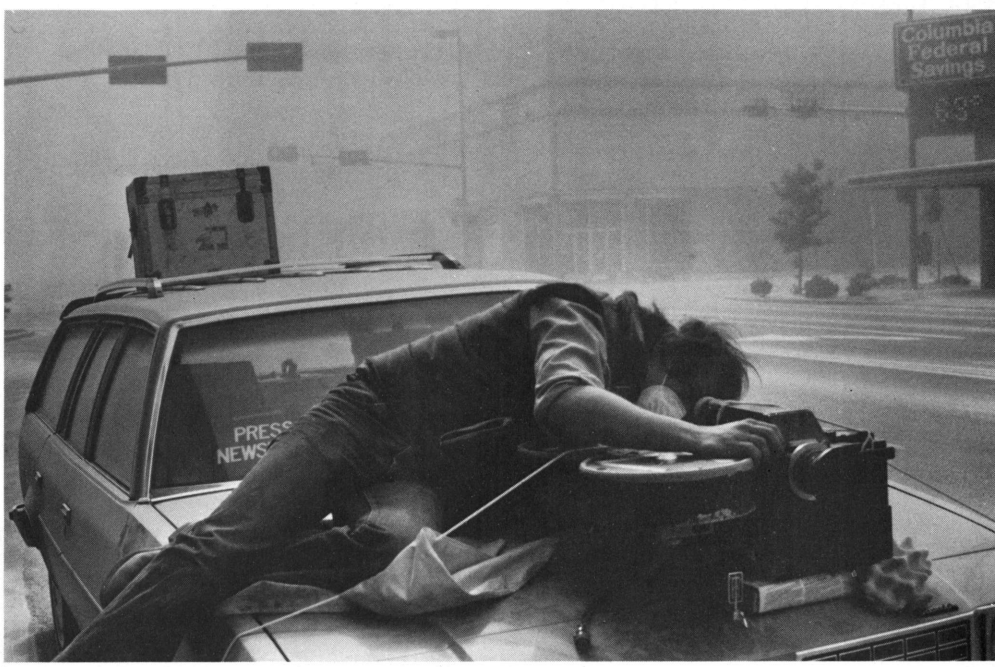
(LEFT) Nearly deserted streets of downtown Yakima, Washington are obscured by ash following May 18th eruption in this scene from film's footage. A half-inch of ash fell here. Other towns suffered from up to five inches of ashfall. (RIGHT) Ashfall from the second eruption of Mt. St. Helens creates bumper-to-bumper traffic jams on Interstate 5, west of the volcano, on Memorial Day weekend, as shown in scene from film.

rapher, April, 1979) had nurtured this idiocy. And now I had disregarded my instincts, and sat slumped in sullen depression watching television images of the greatest volcanic eruption in modern American history from more than a thousand miles away.

There is, by the way, no reasonable means of dealing with a volcano freak. Ask my wife. Or my partner. The determination to film volcanoes can be obsessive, whatever the reasons against. And surely there were some.

First off, filming in Imax is a cumbersome and expensive business. The camera, loaded, weights some 70 pounds—hardly ideal for newsreel or *cinema verite* documentary work—and consumes 65mm negative at 336 feet a minute, meaning that the six 1000-foot rolls of negative I grabbed in our hasty departure for the mountain would last for 18 minutes of screen time (a shooting ratio of a little over 2:1 on this first shoot, as things turned out). Also, we had no sponsor, no client; this one would be our own nickel. What I did have was the concurrence of my partner, Les Novros, who founded Graphic Films more than four decades ago, and a fierce conviction that this event deserved recording in a spectacular cinema format. I was also confident that we could fashion a newsreel of some sort for exhibition in the limited number of Omnimax Space Theaters (the dome screen version of Imax) which exist. And, as I say, few reasons deter a volcano freak.

Several days later, I and a two man crew are on the scene recording the aftermath of the mighty eruption. I have borrowed Jim Neihouse, a capable, young, Imax-trained cameraman, from Mal Wolfe's company, Motion Picture Associates, in Santa Barbara. Jim had been assistant cameraman to Mal on our shooting



Cameraman Jim Neilhouse operates IMAX camera strapped on the hood of a station wagon, while filming POV shots in ash-shrouded streets of Yakima following the massive eruption. (BELOW) Part of the 150 square miles of flattened timber is visible in this frame from the film's aerial footage. Trees reveal flow lines of blast, forming patterns resembling greatly magnified fur.

of the Omnimax film, THE GREAT BARRIER REEF, in Australia the previous year. Then, we were sucking air through *SCUBA regulators, now we're* sucking air through particle masks. Michael Rober, a young talent with Graphic Films, volunteers to help, and is readily taken on.

When we arrive, we encounter a difficult shooting situation. The entire area within a 20-mile radius of St. Helens has been completely restricted. A massive search and rescue operation is underway by Air Force and Army helicopter units. Private aircraft are banned from the area. So much for easy aerials.

Also, the weather has turned bad. In fact, the smoldering mountain has begun making its own weather, generating a consistent cloud cover which shrouds the decapitated mountain and the surrounding area. The mountain isn't to be seen or filmed even if one could get to it.

We begin to trust instincts again. And it leads to luck. We drive our rented, equipment-loaded station-wagon to Yakima, Washington, which is digging out from a thick layer of ash. Thirty mile-an-hour winds whip into town just after we arrive, sending the ash airborne, duplicating conditions of the day of the eruption.

The city is shrouded in ash. A mid-day dusk prevails. Cars with headlights move slowly through deserted streets. People with respirators and kerchiefs stumble through the gloom. We mount the camera (and Jim Neihouse) on the hood of the station wagon for a feast of POV shots. At day's end, we are caked with volcanic ash and spitting the taste of St. Helens, but we've filmed scenes which haven't occurred since. It's a start.

The days that follow are frustrating. There is no way of getting into the mountain by private aircraft, and the weather continues lousy. We headquarter at Toledo, Washington, where the search and rescue operation is headquartered. We grab space-available rides aboard the military choppers, taking turns with other newspeople who have converged here from around the country and the world. The rides are no director's or cameraman's paradise. These are strictly search and rescue missions, working limited coordinates, searching and searching again. So we go where the helicopters go, grateful for the ride, grabbing the shots we can through the side doors of the Hueys or the back ramps of the larger Chinooks.

For me, it is depressingly reminiscent of Vietnam, where I spent three trips in the 60's with war correspondent credentials: grim rides on military choppers over battered countryside; weary helicopter crews; corpses in rubber body bags

Continued overleaf

Cameraman Jim Neilhouse reloads IMAX camera cradled in special belly mount designed to operate on Bell Jet Ranger helicopters. (BELOW) Neilhouse tries to catnap, despite the weight of the IMAX camera on his lap during search and rescue flight into the devastation zone. Camera had to be hand-held during rides aboard military aircraft.

Mount St. Helens looms ominously in the background, as camera helicopter perches on devastated ridge during reloading of camera. Even at this distance—more than ten miles from the volcano—huge trees were scorched, flattened and shredded. It was like "a scene out of Hell"—or Armageddon.

New 6kW HMI®

The latest in the ARRI HMI range – available now.

Here's the next logical step in the ARRI HMI range. In addition to the battery-operated 200W light, we also have a 575W, a 1.2kW, a 2.5kW, a 4kW and now the new 6kW.

All but the 200W are Fresnels. The lens on our 6kW is 19.7 inches in diameter, to take maximum advantage of the HMI bulb's characteristics. Shock-mounted, of course.

The ribs on the housing add rigidity without adding weight – and they effectively double the surface area, for radiation cooling. Convection cooling inside our fixture is efficient, too. The HMI bulb runs at a temperature lower than that recommended by its maker.

The ignition circuit is in a separate module mounted below the burn chamber. It stays cool and it's easily accessible. The tube frame floor-stand protects it when you put the fixture down.

The 6kW head weighs 85 lbs. The ballast weighs 134 lbs. It's the smallest 6kW HMI ballast you can buy today.

ARRI
ARRIFLEX CORPORATION

500 Route 303, Blauvelt, New York 10913. (914) 353-1400. And 600 No. Victory Blvd., Burbank, California 91502. (213) 841-7070.

Canada: ARRI/NAGRA Inc., 6467 Northam, Mississauga, Ont. L4V 1J2. (416) 677-4033.

(LEFT) The cataclysmic eruption of May 18th, which released the energy of 27,000 Hiroshima-size atomic bombs and darkened skies of the Pacific Northwest. Graphic Films utilized still photographs to portray the first major eruption. Later eruptions were filmed live by Graphic Films crews. (RIGHT) Steam plume boils from Mt. St. Helens several weeks after the first major eruption, in this frame from the IMAX production. Graphic Films crew filmed extensive aerials of volcano freshly dusted with snow.

again; now gray ash instead of the red dust of Vietnam.

The devastation within the blast area is awesome: mile upon mile of huge trees combed flat by the force of the eruption; every tree top pointing away from Mount St. Helens. The air reeks with the smells of ash and scorched forests. Strange lighting. Erupting fumaroles. Indescribable landscapes. Ash everywhere.

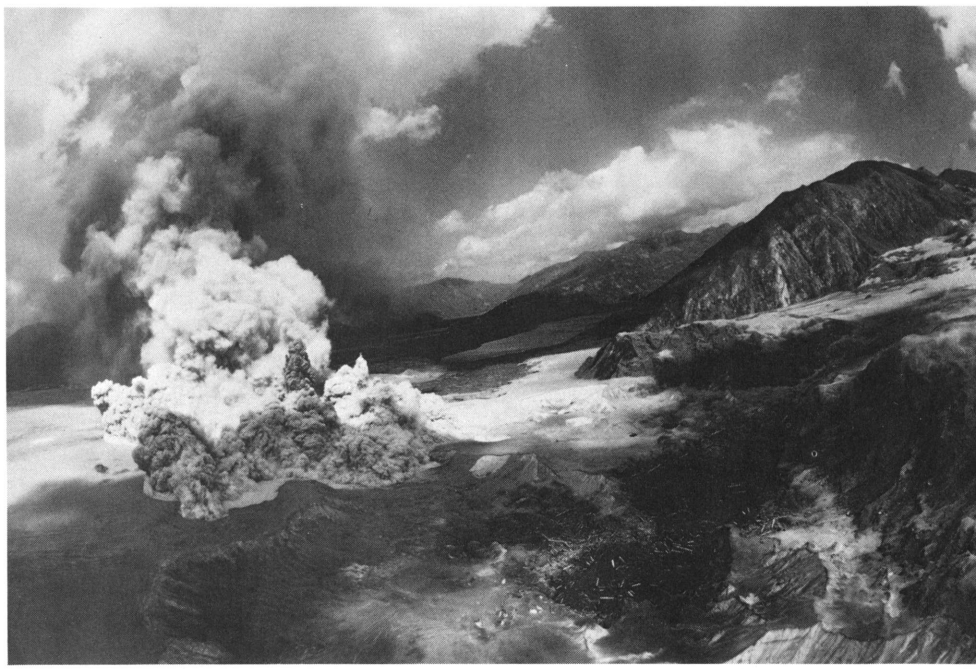
Camera problems. The ash pervades and infiltrates everything. Air filters on cars have to be constantly changed. The turbine blades in the jet engines of the helicopters are taking merciless wear from the abrasive ash particles. Now, despite our protective taping, ash is in the camera. We can't hear the camera motor slow over the the sounds of the helicopter. We don't monitor the tachometer closely enough. One of our best early rolls is lost to undercranking. Neihouse is up late cleaning and recleaning the camera.

Helicopter problems. Neihouse and I are together on a Huey during a mission into the devastated area when the engine suffers a power loss. We have to make an emergency landing in a meadow just outside the "brown-zone." No danger, but we lost a day's shooting waiting for another helicopter to retrieve us. Things aren't going right. And the mountain is starting to move seismograph needles again.

Morning of May 25. We are up at 5 a.m. and on our way from our Portland motel to Toledo for another day of catching rides aboard the search and rescue missions. A curious thing happens on our drive to Toledo. There is no dawn. It's still pitch black at 6:00 a.m.

Then a rain of cement-like consistency begins to pelt our windshield, Mount St.

Continued on Page 616



Steam fumaroles continued to erupt from the edge of Spirit Lake three weeks after the first major eruption. The force of the blast transformed 150 square miles of terrain north of the volcano. (BELOW) The hellish landscape smoldered and steamed for days afterward, as filmed from search and rescue helicopter.

Arriflex SYSTEM-3

Your new, full-spectrum choice.

Ferco is proud to announce the on-line availability of SYSTEM-3, backed by the inventory and expertise of the Arriflex Corporation, renowned for its world-wide commitment to technological excellence.

We believe that once you discover all the advantages and superior production efficiencies of SYSTEM-3, you'll choose it over the other major camera system. Now you can have total interchangeability of key components within an exciting new generation of Arriflex production cameras. SYSTEM-3 includes the innovative ARRI 35 BL-3, uniquely different from all other *silent* 35 cameras in that it maintains the integrity of lens mount and film plane. (The 35 BL-3 incorporates additional features and improvements.)

The second camera in the system is the re-designed ARRI 35-3, now available with its own full complement of accessories including three interchangeable viewfinder systems and a coupled video tap. These great ARRIFLEX 35 cameras, which accommodate a wide range of super-speed and standard lenses, magazines, finders, support systems, matte boxes and more, comprise the state-of-the-art technological development known as SYSTEM-3.

Ferco is also pleased to announce its newly structured camera department under the direction of Tony Tamberelli, who will back-up SYSTEM-3 with unrivaled replacement and field service. Call or see him and find out more!

Ferco

707 11th Avenue, New York, N.Y. 10019 (212) 245-4800

Rosco diffusion makes the difference.

Subtle or dramatic, the exact effect you want is yours easily, quickly and at low cost.

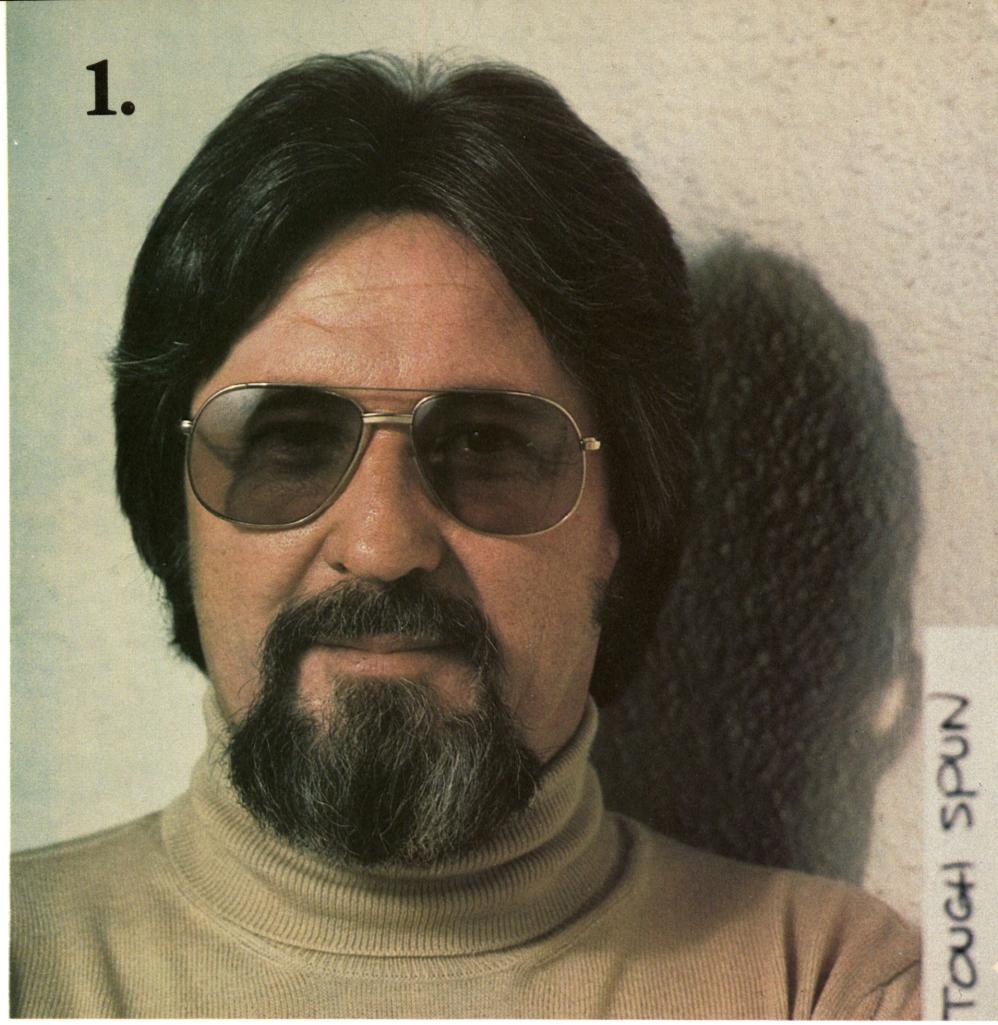
As we've continued to develop the complete line of Rosco diffusion materials, cinematographers have continued to find new ways to employ them. The result of this collaboration is a virtually unlimited range of lighting looks.

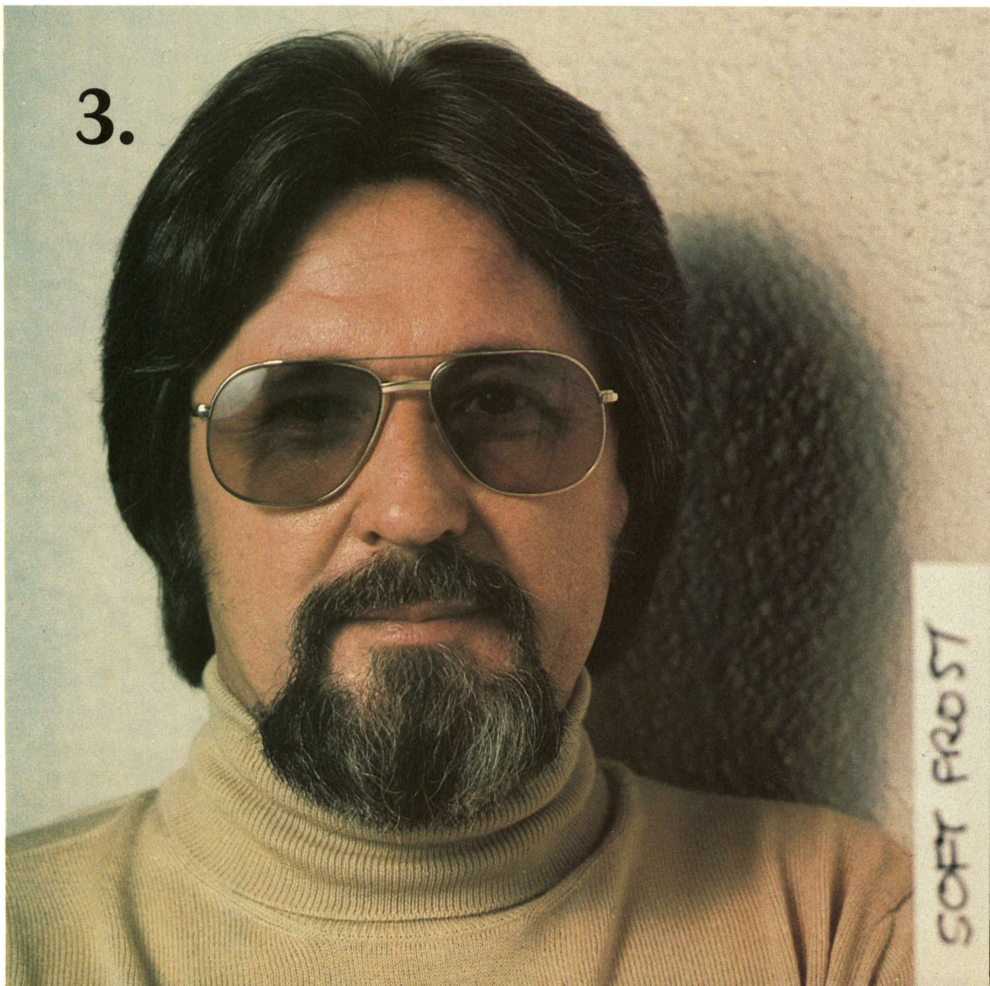
Here, cinematographer Laszlo Kovacs personally demonstrates the effect of just three Rosco diffusion materials on the same HMI 1200 source. (Photo 4 shows the effect of the luminaire alone. In the other photos, only the diffusion material changes.) Imagine all the effects you can achieve with Rosco's full line of 16 materials.

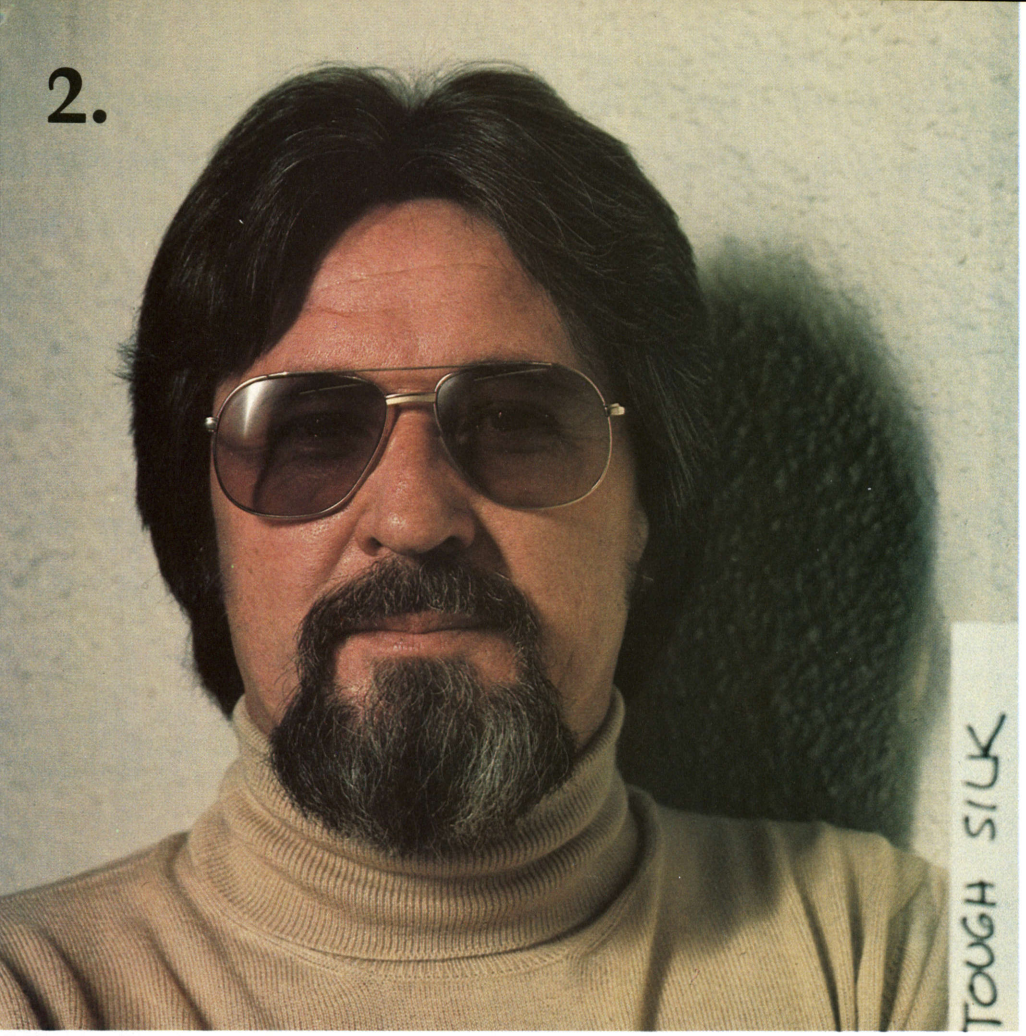
Some of them are dense enough to be used as white bounce surfaces as well as soft diffusers. Others are so transparent, they provide the merest touch of diffusion. Most are so heat-resistant, they can be used directly on the luminaire, if need be.

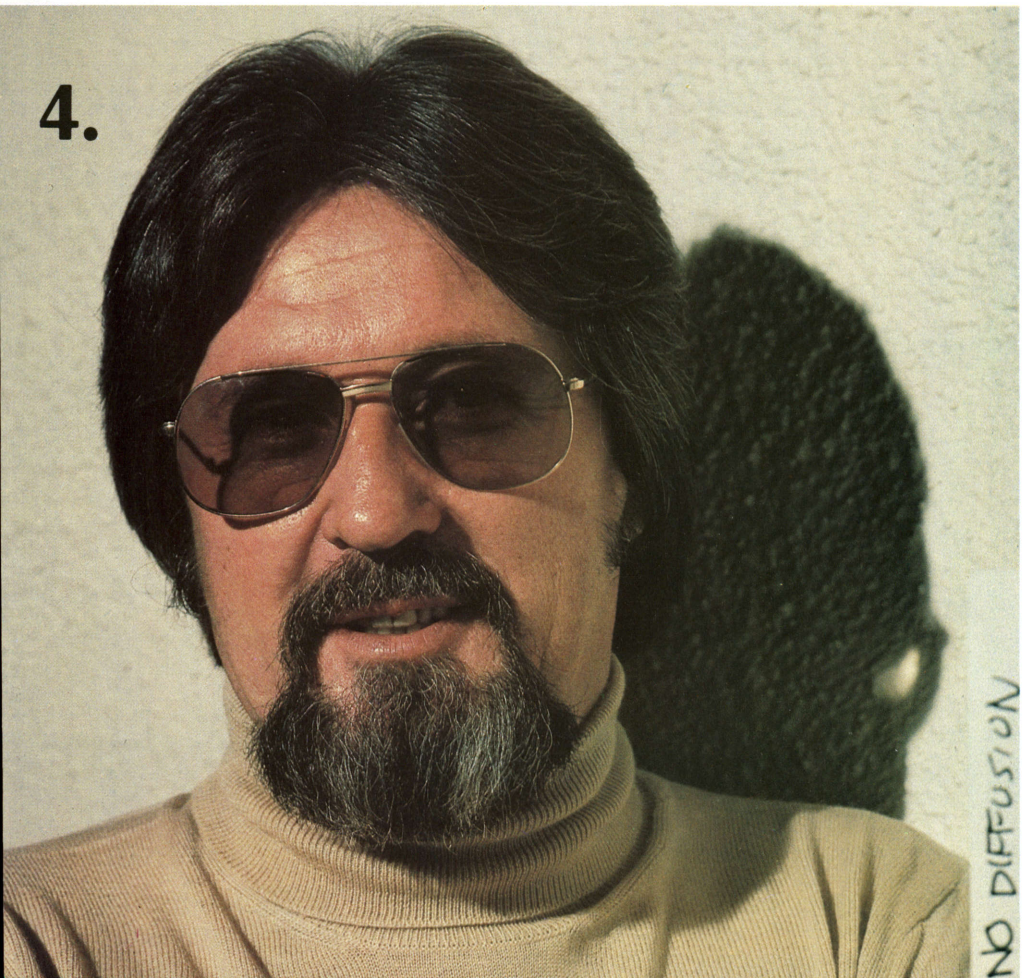
This range of tools – known as the Cinegel light-control system – has been judged worthy of an Academy Award by the Academy of Motion Picture Arts and Sciences.

For all the facts, contact your rental house, your local Rosco dealer or any Rosco office.









1. Rosco Tough Spun.
The safe, plastic equivalent of spun glass, Tough Spun offers much the same quality of diffusion, but is far more durable and won't shed particles. (Light Tough Spun is slightly more transparent, with the same safety and durability.)

2. Rosco Tough Silk.
As you can tell from the image of the luminaire reflected in Kovacs' glasses, Tough Silk diffuses light in one direction only – in this case, vertically. The subject's shadow, although crisp vertically, is soft horizontally. Tough Silk can be used to shape a beam of light as well. Its specially treated surface optically elongates the beam on one axis. You control the diffusion effect by rotating Tough Silk in the frame.

3. Rosco Soft Frost.
To soften shadows while retaining a sense of the lighting source, Soft Frost is generally used in large frames placed between the source and the subject. For less diffusion, try Rosco Half-Density Soft Frost. To tent large areas with diffusion, use Rosco Wide Soft Frost, in six-foot widths. All Soft Frost materials have a slight warming effect to the color.

4. No diffusion.
The effect of the luminaire alone – an HMI 1200, in full-flood position – is shown in this control photo. In the other photos, only the diffusion material changes.

Free swatchbook.
Yours for the asking, the Rosco Cinegel Swatchbook shows all of our materials for diffusion, reflection, color temperature control and special effects.

rosco

36 Bush Avenue
Port Chester, NY 10573
(914) 937-1300 Telex: 131472

1135 North Highland Avenue
Los Angeles, CA 90038
(213) 462-2233 Telex: 691123

69/71 Upper Ground
London SE1 9PQ. England
01-633-9220 Telex: 8953352

About Laszlo Kovacs.
One of the country's most versatile and talented cinematographers, Laszlo Kovacs, ASC, has photographed such films as *The Legend of the Lone Ranger, New York, New York, F.I.S.T., Inside Moves* and *At Long Last Love.*

TALKING TECHNICALLY

By DAVID W. SAMUELSON

SOPHISTICATED TRAVELLING MATTE

Last month I described the basic principals of Travelling-Matte Process Cinematography in which the foreground subject is photographed in front of an intensely blue background and by a system of printing in combination with mattes produced from the blue background are combined with a background scene shot on another occasion.

In the early days of T-M the system suffered from an inherent problem in that any blue area in the foreground which matched the background, or areas of water or glass, etc. which reflected the background produced "holes" in the matte which allowed the background to print through and, although auxilliary mattes which filled up the holes, were (and still are) used, the range of blue tones that could be used was strictly limited.

The problem has been overcome by a system of restoring blue tones in the foreground subject by making a synthetic blue internegative. To do this, red and green separation interpositives are made in the normal manner, after which the green separation is used in a modified manner to make a synthetic blue internegative. By this means the blue backing will remain dark but some "blue" can be introduced into the foreground image to mix with the reds and greens to produce magenta and cyan. By this system it was possible to separate the "blue" of Superman's clothing from the blue of the backing.

The synthetic blue separation is made by a system devised by Petro Vlahos and known as the "Colour Difference Matte". The original negative is put into a printer in bi-pack with (in contact with or together with) the green separation and a print made on panchromatic B&W separation film by blue light producing an image that is clear except for where the green and blue separations differ, hence the name "Colour Difference Matte". This in turn is bi-packed with the green separation to become the "blue" separation and will reproduce the blue density of yellow and green correctly but the blue backing will be dark rather than light, as would be the case in a normal blue separation. An alternative method is a combination of a blue and green separation onto one piece of film — hence, blue green separation.

The synthetic blue separation is made by first making special high-contrast blue separation mattes from the original. These will have a clear background and a dense foreground. These mattes are then printed in bi-pack with the original negative, using red light and panchromatic film to produce female mattes from which male mattes are then made.

The synthetic blue separation is then printed in bi-pack with the original foreground colour negative, using a red light and panchromatic film, to produce the female matte, and printed again to produce the male matte.

When all this is done the three separations of the foreground image are bi-packed in turn with the female matte and printed onto internegative stock, the background separations are exposed in contact with the male matte and we finish up with a composite negative.

Which is why Travelling Matte composite cinematography is a very specialized business.

For further information readers are advised to consult:

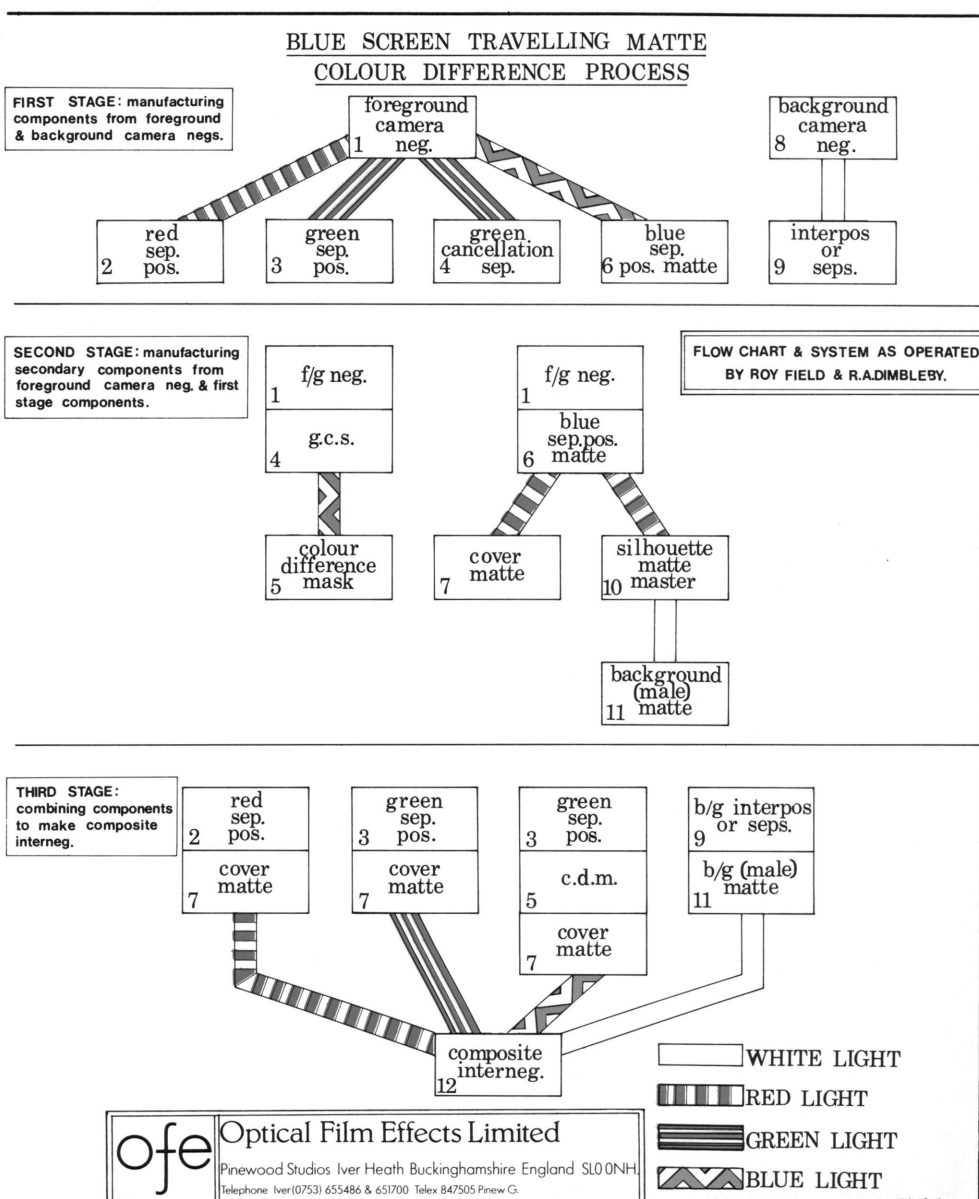
Magic with Mattes by Vic Margutti, BKSTS Journal January 1973

Modern Techniques of Optical Trick Cinematography by Roy Field and Tony Iles, American Cinematographer Magazine, September 1979

Travelling Matte Composite Photography by Petro Vlahos, American Cinematographer Manual, 5th (1980) edition

Lighting and Photographing Travelling Matte Scenes by Dennis Bartlett, American Cinematographer Magazine, June 1981

The author wishes to acknowledge the great assistance given to him by Roy Field, who won an Oscar for his work on Superman I, and who now operates an optical printing laboratory, Optical Film Effects Ltd., in partnership with R. A. Dimbleby. ■


BLUE SCREEN TRAVELLING MATTE
COLOUR DIFFERENCE PROCESS
FIRST STAGE: manufacturing components from foreground & background camera negs.
1 foreground camera neg.
8 background camera neg.
2 red sep. pos.
3 green sep. pos.
4 green cancellation sep.
6 blue sep. pos. matte
9 interpos or seps.
SECOND STAGE: manufacturing secondary components from foreground camera neg. & first stage components.
FLOW CHART & SYSTEM AS OPERATED BY ROY FIELD & R.A.DIMBLEBY.
1 f/g neg.
4 g.c.s.
5 colour difference mask
1 f/g neg.
6 blue sep.pos. matte
7 cover matte
10 silhouette matte master
11 background (male) matte
THIRD STAGE: combining components to make composite interneg.
2 red sep. pos.
7 cover matte
3 green sep. pos.
7 cover matte
3 green sep. pos.
5 c.d.m.
7 cover matte
9 b/g interpos or seps.
11 b/g (male) matte
12 composite interneg.
WHITE LIGHT
RED LIGHT
GREEN LIGHT
BLUE LIGHT
ofe Optical Film Effects Limited
Pinewood Studios Iver Heath Buckinghamshire England SL0 0NH.
Telephone Iver (0753) 655486 & 651700 Telex 847505 Pinew G.

the EASTMAN FILMFARE

News and Information for Filmmakers

Kodak

No. 2

Expand your capabilities with our new high-speed film.

Whether you're shooting in a large office building, a busy department store, or any of many other business or industrial locations, you can depend on new EASTMAN Color High Speed Negative Films 5293 (35 mm) and 7293 (16 mm) for exceptional results.

Since 5293/7293 film is more than a camera stop "faster" than our current negative film, it can be used with much less illumination, as well as to capture high-speed or normal-speed action.

Plus, when used in combination with today's mobile cameras, high-speed lenses, and portable "cool" lights, this new film can help you shoot under previously impossible shooting conditions.

For example, in difficult lighting situations, 5293/7293 can make a big difference in your production budget. Its high speed and wide exposure latitude reduce specialized lighting needs, eliminating considerable heat on sets. And you can also start exterior shots earlier—and end them later.

When you're shooting at night, the exceptional speed and latitude of 5293/7293 can make darkness come alive with drama.

And in soft-light situations, 5293/7293 provides greater shadow depth. More detail. And makes worthwhile all the effort you put into creating sensitive moods.

This new film is ideal for action sequences, too. Why? Because it helps you capture that action no matter *how* quickly it happens.

Want to know more about this new Kodak film? Just check the appropriate box and return the coupon.

The sooner you do, the sooner you can begin to capture *your* world as you've always wanted to do.

© Eastman Kodak Company, 1982

Have a field day with our "Cinematographer's Field Guide."

The third edition of Kodak's *Cinematographer's Field Guide* provides up-to-date, easy-to-use information about all 15 KODAK and EASTMAN Motion Picture Camera Films. It's hardbound, so it withstands heavy use. And it's small, so it fits easily into a pocket.

The book is designed to help you select and order the films appropriate to your needs, and to provide you with information that will help you use these films more effectively.

It's divided into five major sections—Motion Picture Camera Films, Filter Information, Tips and Techniques, Formats and Packaging, and Ordering Raw Stock from Kodak.

Features include a new Filmmaker's Flowchart, which helps you take your projects from start to finish *and* gives you an easy-to-use production scheduling checklist. You'll also find practical information on force processing, hints on how to make people look good when you're shooting for TV, and suggestions for the equipment and accessories you'll need to survive on location.

But that's not all. There's also a list of worldwide Kodak offices that can provide answers to any questions you may have.

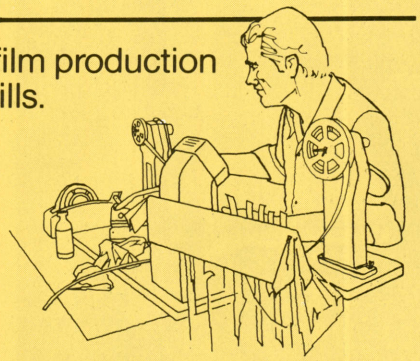
To order your copy of *Cinematographer's Field Guide* (Kodak publication H-2), write to:

Eastman Kodak Company
Dept. 454
Rochester, N.Y. 14650

Enclose a check or money order for $6.95, plus $2.95 for handling. Please add state and local taxes if applicable.

Price is subject to change without notice.

Discover ways to improve your film production skills.



Where? At our "Film Production Workshop," a 2-week course held at Kodak's Marketing Education Center.

The course is designed for film producers, cinematographers, and film editors—anyone who wants to improve his or her motion picture production skills. Daily sessions include lectures, demonstrations, and production assignments; each session is taught by professionals who are currently active in the field.

The first week's instruction emphasizes the basics of filmmaking, including camera handling, shot planning, and editing, and provides you with the opportunity to shoot and edit five different films.

During the second week, you'll work in teams to write, direct, shoot, and edit a 16 mm sound film, using double-system-sound filming and editing.

Specific topics covered during the two weeks include planning for production, storyboarding, basic lighting, selection of films for shooting and duplication, filming for television, shooting on location, and camera angles and movement.

Enrollment is limited, and participants must be sponsored by a professional film unit to attend.

Certificates will be awarded to those who complete the course, and you'll keep copies of both your individual *and* group sound-film projects.

Cost for the entire course is $600 if both weeks are taken consecutively.

To find out more about this and other MPAV Workshops scheduled for 1982, just check the appropriate box and return the coupon below.

Mail this coupon to:
Eastman Kodak Company
Dept A6058
Rochester, New York 14650

☐ Please send me more information on EASTMAN Color High Speed Negative Films 5293/7293. (H-1-5293).

☐ Please send me more information on Kodak's MPAV Workshops. (0116-01-02).

Name _____

Title _____

Company _____

Address _____

City _____ State _____

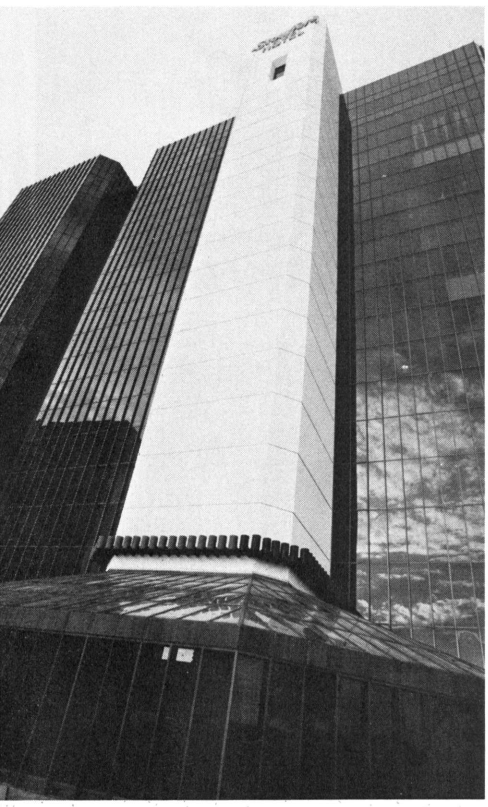
Zip _____ Phone _____

THE FOURTH HOUSTON INTERNATIONAL FILM FESTIVAL

This highly prestigious event, now permanently located in Houston is the only film festival sponsored *by* filmmakers *for* filmmakers

By HERB A. LIGHTMAN

Carrying over its avowed premise that "Less is more"—an approach adopted when "the world's only floating film festival" anchored in Houston a few years ago, the Fourth Houston International Film Festival (15th Annual Festival of the Americas) was, in terms of hoopla and extravagant amenities, truly spartan in comparison with its predecessors staged respectively in Atlanta, Miami, and the Virgin Islands. Those previous incarnations boasted spectacular (one might say *flambouyant*) showmanship and stylized elegance, but were sometimes a bit weak in terms of the quality of features shown.



This time it was the other way around. There were no frills (almost to the point of austerity), but there was a superlative roster of feature films and a veritable *smörgasbord* of outstanding short films—and that, when it comes down to the "bottom line," is what a film festival is all about—or *should* be.

Once again the Greenway III Theaters in underground Greenway Plaza served as screening facilities for the festival, while the adjacent Stouffers Hotel housed the festival's Hospitality Suite, as well as providing accommodations for out-of-town guests and award recipients.

The festival got underway on the evening of April 20 with the screening in all three theaters of the Australian comedy, PUBERTY BLUES, and with its director, Bruce Beresford, making a personal appearance.

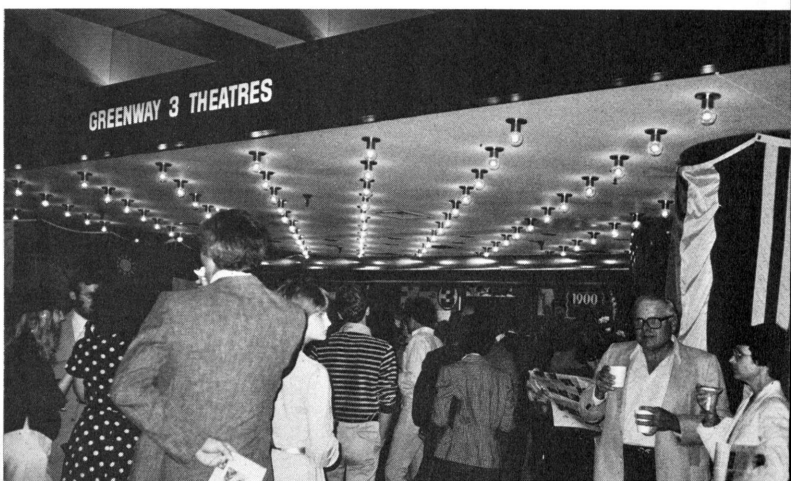
For the next five days the evening screenings included DAS BOOT (West Germany), CIRCLE OF DECEIT (West Germany), COCKTAIL MOLOTOV (France), DARK NIGHT OF THE SCARECROW (U.S.A), DIVA (France), DIVINE EMMA (Czechoslovakia), DON'T CRY, IT'S ONLY THUNDER (U.S.A.), FELLAS (U.S.S.R.), FIGHTING BACK (Canada), GREGORY'S GIRL (Scotland), IN FOR TREATMENT (The Netherlands), IT CAN'T BE WINTER, WE HAVEN'T HAD SUMMER YET (Canada), JANE AUSTEN IN MANHATTAN (U.S.A.), MOJADO POWER (Mexico), A MAN OF IMMORTALITY (Republic of China on Taiwan), OPERA PRIMA (Spain), THE PERSONALS (U.S.A.), THE POWER OF MEN IS THE PATIENCE OF WOMEN (West Germany), SERIE NOIRE (France), SHARING THE SECRET (Canada), SIBERIADE (U.S.S.R.), A SLAP IN THE FACE (U.S.S.R.), SOLDIER GIRLS (U.S.A.), STREET MUSIC (U.S.A.), THREE BROTHERS (Italy), TICKET TO HEAVEN (Canada), TRAPPED (U.S.A.), WASN'T THAT A TIME (U.S.A.), and WHAT CAN BE SHOWN (U.S.A.)

During the mornings and afternoons, all three theaters were occupied with screenings (free to the public) of award-winning short films and commercials. To me these screenings are like a feast, a delicious sampler of many exotic courses, no two of which are alike. Short films dare where features often fear to tread and they frequently reveal stunning visual and experimental styles. Because few of them ever recoup their costs, since there is no established market for short films (a fact which I personally deplore), they are usually "labors of love"—and it shows.

As one of those oddballs who attend a film festival *to view the films,* I managed to see quite a few (by sitting through three in a row most nights), but by no means all of them. Among those that I did see, I found the following to be outstanding:

DAS BOOT—A spectacular adventure thriller, four years in the making, the action of which takes place almost entirely in a Nazi submarine during World War II. Graphically realistic, with stunning performances by an all-male cast, it soars beyond political confines to evoke great empathy for the young crew members trapped in their underwater Hell. It also boasts some of the most spectacular cinematography ever, with the camera racing the entire length of the craft, through tiny

(ABOVE LEFT) Stouffers Hotel in Houston's Greenway Plaza housed Festival headquarters, as well as providing accommodations for out-of-towners attending the event. (BELOW) An informal champagne party kicked off the Festival, as opening night audiences assembled. Attendance was up 30% over last year, about evenly divided between those who had attended before and new people. Entries totaled 1,300, with awards being presented in 85 separate categories.

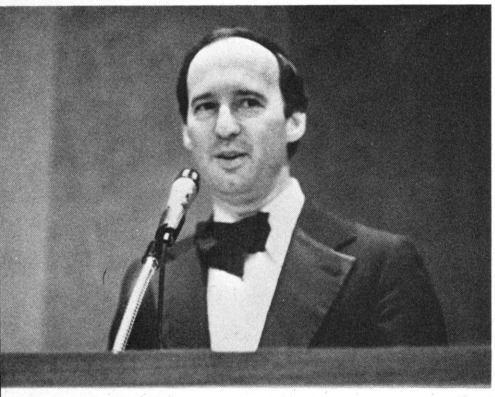


hatchways and cluttered corridors. The alternate use of red, blue and yellow light lends a surrealistic touch to the visuals. The film is a double triumph for writer-director Wolfgang Petersen.

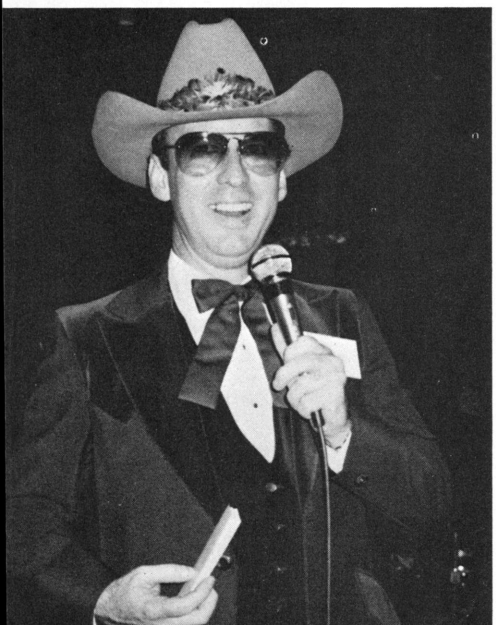
DARK NIGHT OF THE SCARECROW—This was originally produced as a Movie of the Week for television, but is of first-rate theatrical film quality. An off-beat suspense-revenge story, it has been beautifully crafted by Screenwriter J.D. Feigelson (his original script), Director Frank De Felitta and Cinematographer Vincent Martinelli. Charles Durning heads an excellent cast. It is an outstanding example of what can be achieved on an 18-day schedule by a dedicated cast and crew.

DIVA—As a first film by Director Jean-Jacques Beineix, this is a *tour de force* of suspense-action screen melodrama that has the audience on the edge of the seat from start to finish. The highpoint of action is an incredible Moped chase through the Paris Metro, down stairways and escalators onto the train itself. Cinematography by Philippe Rousselot is a study in starkly lighted surrealism.

Australian director Bruce Beresford (BREAKER MORANT, THE GETTING OF WISDOM), acknowledges his introduction at screening of his PUBERTY BLUES for opening night audiences. The Festival featured seminars by NBC program executive Bill Nuss, screenwriter J.D. Feigelson, Pat Wells and Peter Markle (producer and director respectively of THE PERSONALS) and *AMERICAN CINEMATOGRAPHER* Editor Herb Lightman.



A dashing dual personality. (ABOVE) Festival Founder and Director, J. Hunter Todd, as his usual urbane self introducing the films. (BELOW) as "Hopalong Hunter," the very model of a modern urban cowboy announcing winners at the Awards Western Barbecue.



GREGORY'S GIRL—An absolute sleeper of a wacky comedy about Scottish teenagers (and one off-the-wall kid, Gordon John Sinclair, in particular) that is a charmer from beginning to end. It may be technically a bit amateurish—but no matter; it is a triumph of content over technique, a fresh and endearing film that is totally entertaining.

OPERA PRIMA—Described as "a comedy about coming to terms with sexual and cultural freedom and the decline and fall of Spanish tradition." A less than perfect film, due to its vague and rambling plot structure, it is nevertheless atypical of Spanish films in terms of its youth-oriented subject matter and its sexual explicitness (always handled, however, in good taste).

THE PERSONALS—A delightful serio-comic first feature by Peter Markle (who also photographed it), this film was made on a low budget in Minneapolis with a cast of excellent local actors—proving that carefully made regional films can indeed entertain an audience. On the technical side, the film is extraordinary in that it was photographed in standard 16mm and was blown up to 35mm by DuArt Laboratories (New York), using a new computerized process for the first time. The result is so sharp that even an expert technician would have a hard time telling it from original 35mm.

TICKET TO HEAVEN—An absolutely stunning film about a young man who is brainwashed by a religious cult into a "robot conditioned to lie, cheat and work 20 hours a day for the mysterious master of the cult." The main action has to do with his kidnapping and deprogramming by family and friends who hope to bring him back to normalcy. The film is wonderfully written and directed. The acting is uniformly first-rate, with the lead performance by Nick Mancuso scoring tremendous impact.

The Awards Banquet of the festival, traditionally a rather elegant black-tie event held in the Stouffers Hotel Grand Ballroom, was this year transformed into a Western barbecue. Originally planned as an *al fresco* affair at the local Polo Club, it fell a bit flat when, due to rain, it suddenly

Continued on Page 615

Program Director Rikki Kipple was mainly responsible for the roster of excellent feature films shown at the Festival. She has been Assistant Director of the event since its inception 15 years ago.

35MM CAMERAS

ARRIFLEX IIC w/const-speed mtr, hard front, swing away matte box, Super-Speed lenses, 28mm T1.8, 35mm T1.3, 55mm T1.1, 85mm T1.7, 2 ea 480' mags, cables, battery $15,250.00

MITCHELL NC w/110V sync, 220V sync, 110V AC/DC vari-speed mtrs, 2 ea 1000' mags, WA & std matte box, finder, follow focus & Raby blimp . . . Collector Item $6,750.00

ARRIFLEX IIB, vari-speed motor, 2 ea 400 ft mags, matte box, power cables, 16VDC battery & case $3,650.00

16MM CAMERAS

BOLEX EBM, crystal mtr, battery, chgr, ... $1,850.00

ECLAIR ACL, CP crystal mtr, 2 ea 200' mags, finder, handle, battery cables, 12-120mm Ang $7,800.00

ECLAIR ACL II, LED, 2 ea 400' mags, 2 ea battery & chgr, CA-1 & Arri "B" adapter, 10-150mm Arri "B" mt $21,500.00

BOLEX H-16 w/18-86mm EE zoom lens, 25mm 0.95 Nominar, 10mm f/1.6 Switar, 26mm F1.1 Macro Switar, 75mm f/1.9 Macro-Switar, hand grip, octometer, rex-o-fader . . . TOP condition. . . . $1,275.00

BOLEX REX 5 with 17-85mm Pan Cinor, handle, filter set $995.00

ARRIFLEX 16SB, bayonet turret, 16mm, 25mm & 50mm Schneider Cine Xenon lenses, matte box, vari-speed mtr, cable, 8VDC battery & case. . . $3,450.00

ARRIFLEX 16S, 16mm 25mm, 50mm Zeiss lenses, matte box, vari-speed mtr, cable, 8VDC battery & case. . . $2,650.00

ARRIFLEX 16S, 17-70mm Pan Cinor zoom lens, vari-speed mtr, cable, 8VDC battery $2,500.00

ARRIFLEX 16S body w/vari-speed mtr, cavity caps & cable $1,650.00

CINE SPECIAL I w/2 ea 100 ft magazines, 15mm, 25mm & 63mm / 115VAC time lapse/animation motor. . . . $775.00

BELL & HOWELL 70DR w/13mm Elgeet, 50mm Telekinic, 100mm Telekinic . . . Top condition $765.00

PRIME LENSES
ARRIFLEX STANDARD MOUNT

5.7mm f/1.8 Kinoptik $975.00
12.5mm f/2.5 Kinoptik $275.00
14.5mm f/3.5 Angenieux $525.00
25mm f/1.4 Cine-Xenon $275.00
28mm f/2.0 Cine-Xenon $395.00
40mm f/2.0 Cine-Xenon $435.00
125mm f/2.5 Cine-Omnitar $195.00
150mm f/3.5 Kilfitt-Kilar $275.00
10mm f/1.8 Arri Cinegon $575.00
12.5mm T2 Cooke Kinetal $625.00

MATCHED LENS SETS

Set of Ultra "T" High-speeds, 9mm T1.35, 12.5mm T1.25, 16mm T1.25, 25mm T1.25 in Arri bayonet mount $3,750.00

Set of Cooke-Kinetals 17.5mm T2, 25mm T2, 37.5mm T2, 50mm T2 in Arri standard mount $1,175.00

Set of Mitchel Super Speeds, 18mm T1.8, 35mm T1.3, 55mm T1.1, 85mm T1.7 in BNCR mount for hard front Arri $4,500.00

BIRNS & SAWYER HOLLYWOOD

SUMMER

Sales Blast!

(A USED EQUIPMENT SALE)

BIRNS & SAWYER
1026 N. HIGHLAND AVE.
LOS ANGELES, CA 90038
(213) 466-8211 • TELEX 673280

ANGENIEUX ZOOM LENSES

10-150mm T2.3-3.2 Arri "B" mt $3,350.00

9.5-95mm f/2.2 Arri std mt. . . $2,350.00

9.5-95mm f/2.2 "C" mt w/7½" finder $1,950.00

9.5-95mm f/2.2 "C" mt w/1" finder $1,950.00

12-120mm f/2.2 "C" mt. $1,250.00

12-120mm f/2.2 Arri std mt . . $1,650.00

25-250mm f/3.2 Arri std mt w/zoom motor $5,950.00

10-150mm T2.3-3.2 BCP mt . . $3,450.00

17-17mm Pan Cinor f/2.4 . . . . . $425.00

TELE-VARIGON 80-240mm f/4.0 in Arri mount. $650.00

CAMERA ACCESSORIES

CP Studio rig for CP-16R $1,950.00

CP Orientable finder extender . . $350.00

CP PLC-4A Lexan 400' mags . . . $225.00

Studio rig, blimp for 35 BL & 20-120 Ang custom $2,000.00

MITCHELL 16mm 400' mags . . $150.00

B&H 16mm Tracking finder . . . $225.00

ARRIFLEX 16mm 1200' BL mag $1,350.00

COLORTRAN, portable dolly, crab with hydrualic ram, side boards, seat & counter weight. Rebuilt. $5,250.00

HIGH-HIGH, heavy duty roller stands, top condition $160.00

MAGAZINE, 16mm ECLAIR ACL II 400 ft. like new. $1,650.00

MAGAZINE, 16mm ECLAIR NPR, split gate 400 ft $875.00

TALKMAN, two-way, voice actuated crew communications replace walkie-talkie $140.00

WRITE FOR BROCHURE
LATEST STYLE TWO-WAYS

ARRIFLEX 35mm tripod & head $350.00

ARRIFLEX 35mm baby legs. . . $165.00

MITCHELL 35mm GC High-speed mtr & control $350.00

THOMAS Stomp-up "Sputnik" dolly $1,900.00

FAX "SENIOR" animation stand $5,600.00

CRYSTASOUND Amplifier CP16 . . . . . $750.00

SOUND EQUIPMENT

MOVIOLA SRO-16 Opt-sound reader $210.00

MOVIOLA SRC-35 Mag-opt reader $320.00

MOVIOLA SRM-35 Mag-sound reader $210.00

MOVIOLA URS sound amplifier . $80.00

BELL & HOWELL 16mm Mdl. 1568 ARC high intensity light projector 2" lens. Like new. $1,450.00

REAR projection screen 54"x74" w/ frame $225.00

REAR projection 90 degree lens. $250.00

BAUER P-6 16mm Automatic mag/optical with 50mm lens. Good condition $825.00

MAGNASYNC-MOVIOLA 602 16mm sound recorder & reproducer. Case model $1,500.00

RYCOTE zeppelin 416 w/handle $150.00

EDITING EQUIPMENT

MOVISCOP 16mm film viewer. . $225.00

GRISWOLD C-3 16mm splicer. . . $59.50

RIVAS 16mm diagonal splicer . . $125.00

HFC TSD-16 diagonal splicer. . . $125.00

NUEMADE 16mm footage counter $75.00

EDIQUIP edit table & rack $275.00

EDIQUIP film track. $87.50

MOVIOLA SZF 6-gang sync-block $450.00

MOVIOLA SZD 4-gang sync-block w/ mag-head $375.00

HFC 35mm Negative take-up rewind $60.00

Maier-Hancock hot splicer 8/16 . $275.00

SLIM-LINE trim bins with hangers $85.00

MAIER-HANCOCK 16/35mm hot splicer. Excellent Condition $650.00

"EVEREST IN WINTER"

Continued from Page 576

We hoped the current consumption of these heating elements would to some extent be offset by the advantage gained by warming the bearings. These preparations proved highly successful, with all the film shot on the Aaton running to speed. At some time or other all the cameras used on the mountain did run slowly, despite being winterised.

For us a big problem was the increase in stiffness of the drive mechanism of the magazine. We had not had the time to extend the fitting of heating elements to the magazine, so the most that we could do was to heavily insulate the camera body and magazine and hope that the less refined engineering of the drive mechanism of the magazine would not be so susceptible to the cold.

If the preparation of the camera was the biggest problem in London then certainly providing the camera with power was the biggest headache on the mountain. Our tests indicated that the camera's normal one-amp current demand was increased threefold at −30°C. If a battery is allowed to cool to the same temperature it loses upwards of 50% of its capacity.

Our modification of the heating elements was making an extra 2-amp demand. Another factor is that cold batteries charged in sub-zero temperatures appear not to accept full charge. All these problems seemed to point to using high capacity batteries. Certainly a 4-amp-hour if not 7-amp-hour capability. However, two overiding considerations dictated otherwise: the weight and convenience factor and the ability to wear the battery close to the heart's warmth to avoid the 50% loss referred to above. On both these accounts it was much easier to use three of the Aaton 1.4 amp-hour on-board batteries than to attempt to cope with even one 4 amp-hour battery belt.

Compact and lightweight batteries are easy to distribute amongst the team, both during the day and at night when it is necessary to sleep with them to keep them warm. On the same count, the Spectra Combi 2 light meter was kept close to the body. Its minute battery and mechanisms were highly susceptible to the cold. For charging purposes an insulated black box to contain the charging batteries would have been a great asset in the battle against the cold. The one benefit of the coldness is that once charged, a shelf battery will retain its charge almost indefinitely. In practice, however, since we never achieved a full 400-foot roll of film on one battery, no battery enjoyed much shelf life!

On the charging generator front our problems were solved with the inclusion of four Lucas Solar Panel Generators, each producing 800 milliamps in bright sunlight. Even in overcast conditions the panel was delivering 150 milliamps. These panels were light and robust enough to take up the mountain and could be fitted into a rucksack.

As a backup energy source we set up a small domestic windmill capable of producing 5 amps. However, in the event, despite horrendous winds on the mountain, at Base Camp the wind was rarely sufficient even to overcome the inertia of the wind machine. On rare occasions there

(ABOVE LEFT) Climbing the fixed ropes at 18,000 feet under appalling weather conditions. (RIGHT) At 20,000 feet, descending the overhang Rock Barriers during one of the 90 "carries" up to the Ice Cave. (BELOW LEFT) By moonlight, 02.00 hours, −25°C, Japanese 30-man tent in the foreground. (RIGHT) Filming on the mountain involves much rope technology to secure camera and cameraman to the rock area.

(LEFT) An early set-up on 60° rock slabs. (RIGHT) "ACTION!" at 20,000 feet and −30°C. (BELOW LEFT) "Home sweet home" in an ice cave at −10°C, some 20 degrees warmer than outside. (RIGHT) Everest, in a mystic photograph taken from a distance of four miles. The sun prepares to leave the highest point on earth.

was so much wind that it was difficult to keep the machine upright.

One such occasion accompanied our Christmas celebrations. Our mail runner had been sent in good time on his weekly trip to the air strip many miles down the valley. His job was to despatch our film and mail to our Katmandu agent and return with much valued letters from home, and on this occasion a small Christmas tree to add to the camp's meagre decorations. Unfortunately a blizzard raged before his return and by Christmas day we still had not seen any sign of his coming. Just as all hope had waned, a loud cheer hailed his arrival and a hero's welcome from a group which had never before had mail delivered on Christmas day! Unfortunately the tree had been confiscated and our sherpa fined for cutting down live timber in a heavily deforested lower valley!

Apart from the intial hours of exposure to the enormity of the Everest region rarely did the scale of the area impose itself on the visual mind. It was only when you started realising how much time it takes to go from A to B on the mountain, measured in terms of weeks and days rather than the more usual hours and minutes, that the scale of the mountain made itself felt. In an analagous way the enormity of space imposes itself on one by measuring the distances involved in "light years." Time makes distance meaningful.

Consequently, in film terms, trying to capture any sense of scale was less than satisfactory, especially for viewing on a television screen. That is not to say that what was achieved with a 20:1 zoom lens used a long distance from a climber is not spectacular in normal terms, it is more that justice is not being done to the reality of the location. I guess that even the Imax system would be hard pressed to reproduce that initial impact of standing underneath the face of a mountain that reaches over two miles into the sky above.

One telephoto shot taken at a distance of six miles from the mountain was used on this time principle of comprehending scale. The resultant one-and-a-half minutes of diagonal pan of the route was very impressive, but difficult to justify in the context of the hard-pressed 58 minute documentary.

Other lenses which were important for the film included the 9.5mm high speed Zeiss and the Canon 800/16mm. The wide angle came into its own whilst trying to capture what many hours living in an ice cave is really like. Because of the ferocity of the wind, the use of tents above Base Camp was a non-starter. Ice caves were dug into the slopes to form each camp. Such a four-man cave at the end of a 10 foot approach tunnel was the size of the average family saloon car and represented a haven from the elements without. At only −10°C it was on average 20°C warmer inside than out! In winter on Everest a large scale domestic freezer can represent "home sweet home."

The extreme telephoto lens which provided good static shots of action two miles away was unusable with a moving camera. Nothing less than a geared head would have made this possible. Another useful lens was the Cooke Varo Kinetal

zoom. This is a completely sealed unit and, therefore, free from any internal dust or condensation between the lens elements.

Relative humidity was also a factor in the problems experienced with film stock. The modern Polyester-based Eastman colour 7247 that we were using remained reasonably elastic in most of the cold conditions met. As long as it was used within 24 hours of loading. The dryness became progressively more brittle once out of the airtight can, due to the extremely dry atmosphere. This dryness was also responsible for static discharge problems. Beyond the magic −40°C the problems multiply, with the film speed being halved by the time the temperature drops to −45°C and the likelihood of film freezing to bright metal surfaces as it gives up its moisture. This and other snags to film movement would occasionally result in the camera becoming a mincing machine, producing a myriad of razor-sharp pieces of film. By the way, cuts develop into deep and painful cracks at high altitude which only heal when returning to civilisation.

During the initial fortnight in London 90% of our effort went into preparation for the film and 10% to existing. Paradoxically on the mountain we found that 90% went into existing, leaving only 10% for filming. Indeed, we found that the effects of high altitude, intense coldness and harrowing winds forced any ideas of shooting film into a very small corner of our lives for long periods at a time. Small inconveniences took on mammoth proportions. Equipment had to be kept as simple as possible.

The three weeks of the walk in to the mountain enabled us to consolidate the close links with the climbers which were so vital to the success of our film. It was important to establish trust in each other and in the integrity of the film if we were to get uninhibited responses to what is essentially a private and personal experience. Some of those concerned found the camera too discerning, demanding a disturbing degree of honesty. Much later when viewing the completed film a famous climber, one of the few to have been to the summit of Everest, remarked that he was glad that he had not been a member of the expedition and revealed so much to such a large audience!

We were in full support of the desire of some of the climbers to actually shoot footage themselves high on the mountain. We took along some 100 foot daylight loading clockwork cameras and a few of the Bell & Howell 200T auto-load cassette cameras to facilitate this enthusiasm. We weren't going to depend on this amateur footage, but knew that if the climbers could get material high on the mountain then it certainly would be a great bonus to the film. In the event the early enthusiasm for shooting at the front of the climb was worn down by the weather conditions leaving only a few shots of the highest level attained at 24,000 feet. However, after a slow start I was able to overcome the early technical difficulties involved in reaching the ice caves, with much footage of movement on the mountain and life in the caves resulting.

In early February the expedition finally disintegrated under the onslaught of murderous winds and rapidly failing health. The climbers returned to civilisation with smashed dreams. The fronter had not been moved, but a wealth of experience

(ABOVE LEFT) The highest point reached. The remaining vertical mile, in jet stream winds in excess of 100 miles per hour—so near, yet so far—lies in the background. (RIGHT) The Northwest face of Mt. Everest (two vertical miles). This rare photograph was taken at 20,000 feet from the Rongburch glacier in Tibet. (BELOW LEFT) Climbers Porter and Burgess discuss a case of frostbite which was narrowly avoided by an unusual use of a mug of hot tea. (RIGHT) Climbing against 100-mile-per-hour winds reduces movement to a crawl.

(LEFT) Joe Tasker and Aid Burgess crawl painfully up above Camp 2, a camp later destroyed by murderous winds. (RIGHT) Joe Tasker reaches "home" at the Camp 3 Ice Cave. In early February the expedition finally disintegrated under the onslaught of ferocious winds and rapidly failing health. The climbers returned to civilization with smashed dreams, but a wealth of experience.

and knowledge would make the next approach a little less daunting.

One Sherpa met on the way home queried. "Success?" "No." "All members safe?" "Yes." "On Everest that is success."

Much later in the cutting room another success for the expedition had taken place. We had all, climbers and filmmakers alike, achieved a first. Our film was going to bring alive for millions another world. A world in which the essence of mountaineering is discovered in the most hostile place on earth.

ADDITIONAL NOTES ON RECORDING SOUND ON EVEREST

Being of basically electronic rather than mechanical nature, the sound equipment was not expected to give us as much trouble as the camera gear and, on the whole, it lived up to expectations.

When it came to deciding what equipment to take the first consideration was whether or not to take a Nagra 4.2. One or two Nagra SN's were obviously going to be included, but opinion seemed to vary as to the usefulness of taking a 4.2. I decided to take one and used it 80% of the time, from preliminary filming in Katmandu, for a good deal of the "walk in" filming and for all the filming at Base Camp. Two Nagra SN's were taken, and I managed to obtain an SQN mixer, not much larger than a paperback book, which turns an SN into a three-channel recorder with headphone monitoring, microphone powering and variable input attenuation.

At this stage of the preparations I came

Continued on Page 619

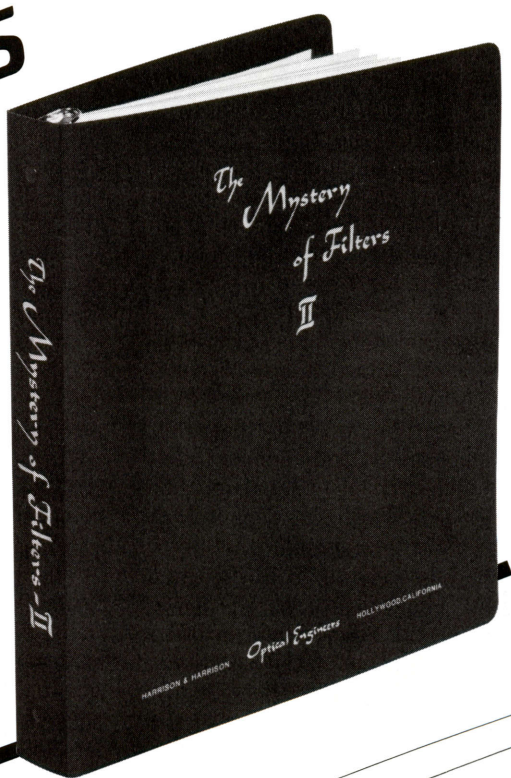
IN HOLLYWOOD, PHOTOGRAPHIC FILTERS ARE TOOLS TO SOLVE PROBLEMS!

The Mystery of Filters II, an educational manual on photographic filters, is written in SIMPLE, DOWN TO EARTH LANGUAGE, by the pioneering company who, for over 50 consecutive years, has manufactured and supplied light transmitting filters for the HOLLYWOOD STUDIOS.

Learn the real facts about HOW and WHY filters are used by the top Cinematographers. Learn the difference between FILTERS, EFFECT FILTERS, REGULATORS, SENDERS & RECEIVERS, and INSTRUMENTS.

This manual is an excellent buy at $14.95, and as a bonus, those who register their manuals with Harrison will receive all future up-dates and insertions at no charge.

Call or write your order today. Learn the facts about photographic filters used by the professionals.



Harrison & Harrison

6363 Santa Monica Boulevard • Hollywood, California 90038
Phone: (213) 464-8263 • Cable: HARALINE

PLEASE SEND ____ COPIES OF THE MYSTERY OF FILTERS II, AT $14.95 EA. POSTAGE PAID.

NAME _____

ADDRESS _____

CITY _____ STATE/ZIP _____

COUNTRY _____

California residents add 6% sales tax.

VIDEO SYNTHESIS:
Real Time Analogue Special Effects

By Denise Gallant
Synopsis Video

"Larger than life." Motion pictures have always been the landscapes on which our truer than life emotions can play. Our ability to give up what is real is stimulated by the multiple mattel levels and motion control techniques that animate a Coppola or Trumbull extravaganza. We love the distortion, the exaggeration, the near-real cinematic effects that suggest new perceptions and visual-mind combinations. These are the poetic romances of the new age of film production.

The film producer reaches into his bag of tricks to find a set of highly refined tools: computer controlled cameras, lighting and film processing, complex miniatures, robotics, and Snorkel lenses fleeting over table model landscapes. Special effects have attained primary status in film direction. The possibilities seem endless.

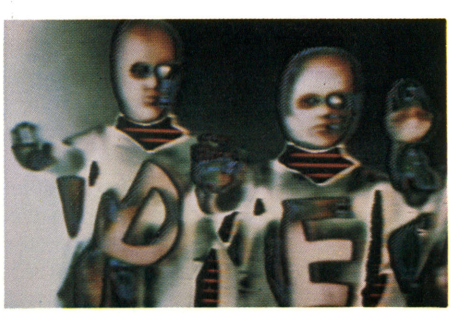
At the bottom of this bag of tricks producers have discovered a new "toy" that has opened up a whole new set of film special effects: video. In hybrid form this low resolution form of visual recording now works on the film floor as a test. The real time image on the video monitor and playback system affirms what will be seen once the film has been developed. In this case the video is used as a "stand-in" in the planning stages to be replaced by the real "star"—the film—in the final take. Only in remote cases has the video reached the "silver screen" on its own merit. DEMON SEED with video effects by Ron Hays was perhaps the first film to integrate video with other special effect film processes. The value and potential of video effects in film, however, have only begun to be realized.

My own involvement with video special effects grew out of my interest in "visual music" or the synaesthetic blending of sight and sound in a new form of experience. As a film student at UCLA I used conventional film animation techniques in conjunction with water colors and pastels to achieve a visual expression of music. After UCLA I went to Santa Cruz where I became involved with student video productions while also making independent animated films. Videotape offered several advantages to student productions, but very often the equipment was not adequately maintained and a great deal of creative effort could go down the drain because of technical problems.

One experience I had persuaded me that I had to learn something about electrical engineering in self-defense. I was videotaping a theater production in an old barn and unaware during the shooting that the lighting for the stage created a large enough voltage drop to garble the sync pulses on my video signal. The production represented the culmination of a senior project for the theater students, and I poured a lot of energy into capturing it creatively on tape. When it was over, everyone was anxious to view the tape, but all I had was a series of rolling images that wouldn't sit still long enough to see anything. I went to a friend, Rob Schafer, who was an electronics technician and asked him to explain to me what went wrong. Not long afterwards I began taking courses in electrical engineering at Santa Cruz. Surprisingly the theory of video electronics and electronic design revealed more than just how to fix a video tape deck. Taking the video signal as an elementary phrase that could then be arranged in a variety of designs and structures produced some intriguing, explosive and beautiful results.

Along with several other students, faculty and staff at Santa Cruz I embarked on a period of intense experimentation in the manipulation and synthesis of video signals. The "godfather" of our work was

Black and white images colorized by the Synopsis Video System.



Gordon Mumma, the electronic music composer who is on the faculty at Santa Cruz. He enabled us to work in the electronic music studio at the university and guided our efforts to manipulate video signals in conjunction with music. Out of our work during this period came the development of a "pitch follower" and a colorizer for kids to play which is part of the exhibit at the Lawrence Hall of Science in Berkeley. The ultimate product of this experiment however was the design of the Synopsis Video System.

Once the basics for the system had been conceived, I came to Los Angeles to work at NBC as a videotape recording engineer and a video news editor. I lived frugally, to put it mildly, so that I could save up enough money to buy the hardware we needed to construct a workable system. Rob continued to refine the design of the system in Santa Cruz and finally during one crazy two week vacation we assembled the prototype of the system in order to make a demo tape. What we had was a rat's nest of wires on a table top with knobs hanging off everywhere, but it worked.

Once we had constructed a more workable and portable system we began putting on concerts with electronic music and video "light shows" at rock clubs. Eventually I set up shop in Los Angeles in order to begin doing video work for record companies who could see the possibilities of the system for recorded performances rather than just using it for live events.

At one point I was sharing space in a warehouse with a group of film special effects people who were both fascinated and skeptical about what I was doing with video. After a long hard night of experimenting with my equipment I came out into the studio area to discover a dummy of a man melting grotesquely under the hot lights as the camera filmed it frame by frame. The producer of the film for which this effect was being done said to me, "I bet you can't do that with video." I didn't really aspire to create images like that, but I did respond to his challenge. I embarked on a series of experiments which resulted in a whole new range of effects based on the systematic distortion of existing images — effects which tended to be holographic in appearance and which were more beautiful than horrific. Practically everyday we discover new things we can do with the system we have constructed.

The Synopsis Video System is a special effect unit custom designed for maximum artistic control. As an "analogue computer" the effects are generated in real time for on-the-spot performance possibilities and live concert situations.

The heart of the electronic design is a colorizer that can be infinitely modulated from multiple sources. An eight level keyer is the primary control unit to the colorizer module. A keyer is essentially a device for combining two or more video images by switching back and forth at specified points in the scanning pattern for the image. The point at which the keyer switches from one image to another can be determined in a number of ways. The simplest is the brightness level of the image, i.e. whenever the brightness of one image exceeds a certain value the switch is thrown. (This is called a "luminance key.") A multilevel keyer is able to throw different switches at different brightness levels. With our eight level keyer, the levels can be individually determined according to the gray scale of any selected video or pattern input, and the colorizer can feed anything into each level. Each level has its own luminance, saturation and hue control, easily accessible for immediate change. Each of these controls in turn has multiple external inputs for adding complex signals. One video tape signal can determine the levels while a separate camera source can supply the luminance to a given level while the color hue itelf is modulated by a textured waveform. The overall tones and video pattern combinations are as endless as one's imagination. Up to four separate key inputs are possible for combined effects such as titling over multiple keys. Inverting signals in either luminance, saturation or hue gives unearthly combinations rarely seen on any TV screen.

The second key ingredient in the system is the generation of electronic patterns which can be combined with the im-

age or used to modulate certain aspects of the image. Patterns are created by oscillators similar to audio oscillators: triangle, pulse, square, sine, and sawtooth waveforms. Very high frequency oscillators create vertical bars while lower audio-range frequencies give a horizontal effect. In audio synthesizers it is the combination of the pure waveforms that makes the sound interesting, e.g., phasing, flanging, and ring modulations. Similarly in video a wide triangle gives a beautiful shading and "glow" effect when modulating the luminance of the video signal. But it is a horizontal parabola modulating the frequency of a vertical parabola whose drift is modulated by a sine, all of which modulates the frequency input of a high frequency triangle, that produces a continually changing swirl effect. This can be used as smoke, fog, clouds, or ripples in a lake depending on how it is patched into the colorizer.

The colorizer, oscillators and eight level keyers can then be patched into a four level fader. The faders are also variable into a soft and hard key. A soft key is a mixing of two video sources rather than a simple switch between them as is accomplished by a hard key. The faders are infinitely variable from a hard key in one direction through every degree of mixing to a hard key in the other direction. A real color signal can pass through the fader with its original signal untouched until a second colorized signal is added by fading or partially keying into the selected luminance level. If a singer, for example, is shot against a black background, then special effects can be added in the background. Simultaneously the highlights on the face or the guitar can be synthesized with other colors or effects.

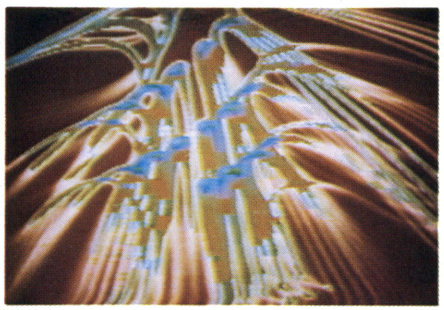
A second graphic effects system has been added to create a second set of organic-like form variations. Brian Samuels, who previously designed special effects with Laserium, has translated his techniques into the video medium. A special raster-scan design combining the two systems gives a highly complex video manipulation signal. Essentially what this involves is a systematic distortion or manipulation of the scanning pattern for a TV display tube. Rather than scanning the screen in a uniform series of horizontal passes, the system is modulated so that the scan lines themselves follow a different pattern on the screen. A conventional image can then be manipulated or turned into an abstract design. A child is "slit-scanned" out of star fields, a dancer spirals as a ghost form and wraps herself into a helix, a face melts in holographic hues; these are a few of the more exotic combinations of video and raster-scan designs.

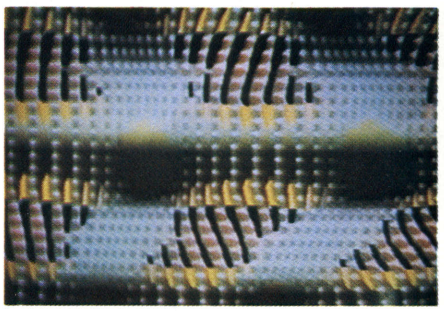
In order to turn the design back into a standard television signal, a video camera captures the image off the monitor. The system uses a black and white camera for this process since the color can be added synthetically later. Similarly a black and white video camera is used to capture patterns displayed on a modified medical oscilloscope as a means of converting electronically generated signals into visual designs.

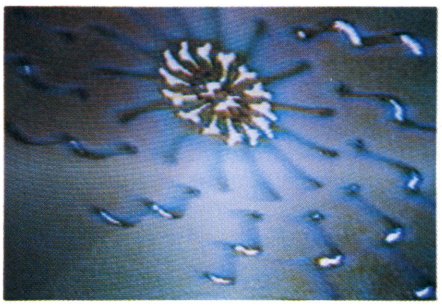
An externally interfaceable sequencer has been designed to program an effect through the various levels, or it can program multiple effects in one level or key. Triggers, gates and voltages add variable timing effects. A trigger is a switch which can be thrown by the onset of a specific voltage level or range and which stays in its new position until a new pulse is received. A gate is a switch which is opened by a specific voltage level or range and stays open only so long as the controlling voltage stays on that level. An audio interface can also provide sequencing rhythms to percussion or other amplitude or frequency modulations. The touch sensitive keyboard can override the sequencer for live playing of the effects so that the entire system becomes an instrument performing "visual music" in real time.

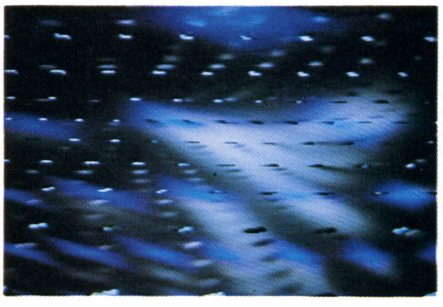
For maximum audio interface a pitch follower is used. It translates the pitch or amplitude of an acoustic sound to a voltage. This voltage can then affect any module in the video synthesizer. Pitch and amplitude of the audio signal can change luminance, saturation, or hue of any video key level, the frequency, pulse width or drift of any oscillator pattern or the strobe

Abstract graphics generated completely electronically at Synopsis Video by analogue techniques in real time.

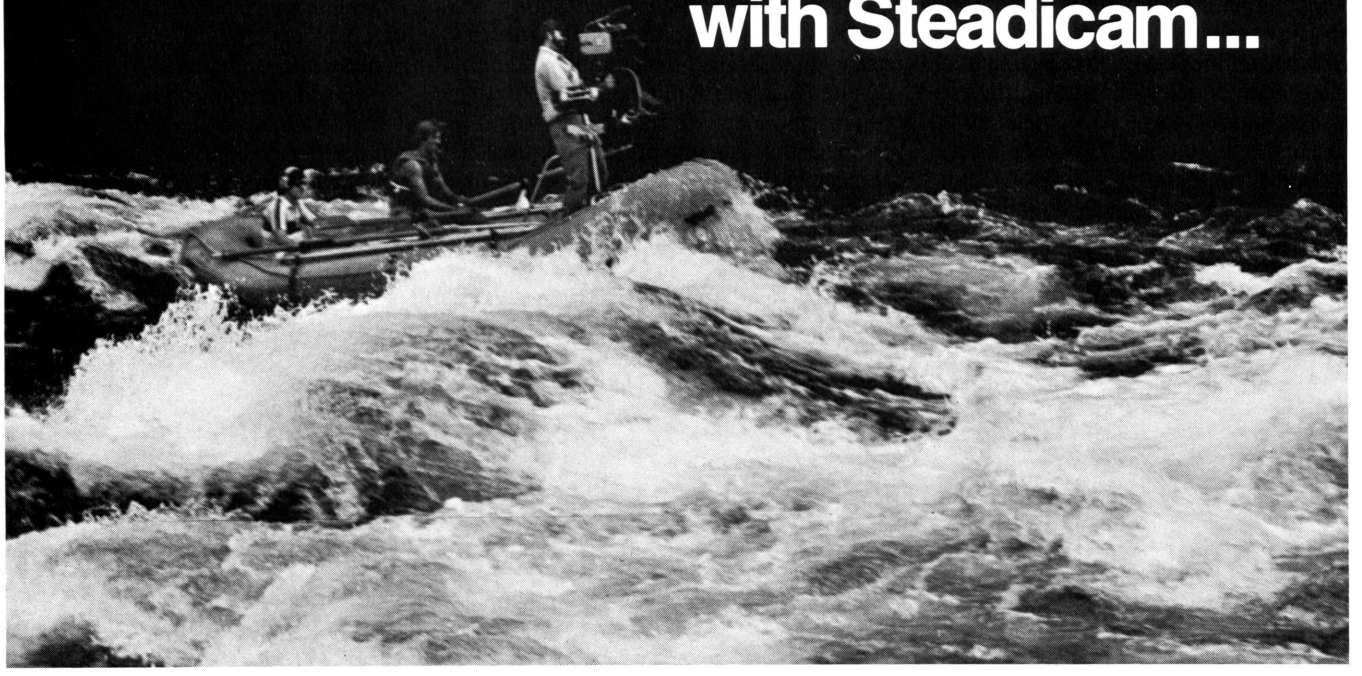








Shooting the rapids EFP-style with Steadicam...



Planning ahead with Steadicam, Cinema Products' Oscar-winning video/film camera stabilizing system, pays off in spades. Economically as well as artistically. A good example of such planning is a new sports series for cable TV, *"Outside The Arena,"* produced by Westwood Communications, Inc. (Eugene, Oregon).

The premise for the series is to take well-known sports figures out of their commonly-known element, and to feature them as they are engaged in various interesting activities. The pilot program involved videotaping a famous pro football player kyaking down the McKenzie River in Oregon.

To get the best footage from the camera raft (equipped with a Hitachi SK-91 camera and an HR-100 1-inch portable recorder), Steadicam was mounted on a specially built pole which was welded onto the framework of the raft.

"Even though the raft was forever being tossed every which way but the right direction, Steadicam came through with flying colors," says Steadicam operator Stephen W. Allen of Allen Production Services, Ltd. (Portland, Oregon). "In situations where I had to pay more attention to the water in front of the raft than to the monitor, Steadicam practically kept in frame by itself."

"Steadicam was an integral part of the planning for the production of this segment," says producer Bruce O'Neil.

"Future segments will no doubt place even greater demands on the Steadicam, due to the many and varied locations we plan to use for this series."

The results of the two-day Steadicam shoot on the McKenzie River were spectacular. Says director J. Clayton Lawson: "Steadicam enabled us to capture some of the most exciting moments ever shot on a white water river."

Steadicam, of course, is not restricted to "shooting rapids." On the contrary. It is a most versatile production tool which can be used effectively—even in "normal" shooting circumstances—in a thousand and one dramatic ways.

Steadicam operator Stephen Allen shooting with video camera and Steadicam on the McKenzie River in Oregon.

For further information, please contact:

cinema products CORPORATION

Technology In The Service Of Creativity

2037 Granville Avenue, Los Angeles, California 90025
Telephone: (213) 478-0711 • (213) 477-1971 • Telex: 69-1339

STEADICAM® is covered under U.S. Patent No. 4,017,168 and under foreign patents abroad.

timing of the inverter. For example the dark shadows of the guitar player's hair can intensify purple or blue according to the pitch of the guitar solo, while the drum pulses linear patterns through the highlights of his guitar. The output signal of any external audio synthesizer — triggers, gates or keyboard voltages — can directly interface with the video synthesizer to provide an overwhelming combination of possibilities. The Oberheim oscillator modules, the Arp 2600 and various Emu modules have all been used extensively in experimental situations and live performances.

Since the video synthesizer has been built with the latest circuit designs, there is no delay in turn-on time or drift when the system is used over a long period of time. All modules are small, portable and stable and can interface with other video systems in live performance or studio use. The video signal is of broadcast quality and the video has been used for both cable and network television. Color stills are obtainable from the video screen and can be used for live slide shows during concerts, covers for magazines or albums, and solarization effects in commercial still photography.

In the realm of future technical possibilities our group of engineers is looking forward to digital computer interface for both graphics and control. Laser video scans and wall video projection techniques are mediums for possible program ideas. The video disc market, once a future medium, is now a viable market that we have been exploring and researching for several years. We hope to make an impact on some of its early programming — specifically in the area of visual music.

* * * * *

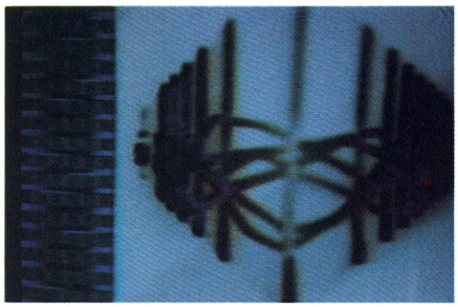
The twenty foot image of David Bowie melts across the giant screen as a visual nightmare reality. The audience applauds music, artist and effect. It is KROQ video night at the Country Club in Los Angeles, and the audience is both enthralled and entertained by the rock promo "Ashes to Ashes." Visual surprises correspond dramatically to song lyrics. A poetic sense of illustration incites the viewer to participate as interpreter of a deeper meaning. The visual music piece becomes more than mere record company promotion material. It acts as a clue to the possibilities of home video entertainment: a video music composition that can be played and appreciated many times.

The David Bowie video was unique in that it portrayed a complete image idea in itself. The promo was not a "live" performance captured on film, nor a reconstructed live-time event that attempts to communicate the excitement and energy of a real performance (and so often misses). Nor was it a "conceptual interpretation," a storyline consisting of settings and situations which are more the manipulative genre of the film-style artist. The successful video rock piece is in accord with its television medium. It involves rather than narrates.

Visual music is a specific medium with very specific artistic considerations. The video disk format heightens these concerns as the hybrid of two home entertainment units are employed: the user's TV and home stereo systems. The new technology necessitates a new product with equal attention given to both audio and sound to fully entertain the visual-listener, a new technical and artistic interface that can bridge the gap between record buyer and TV watcher.

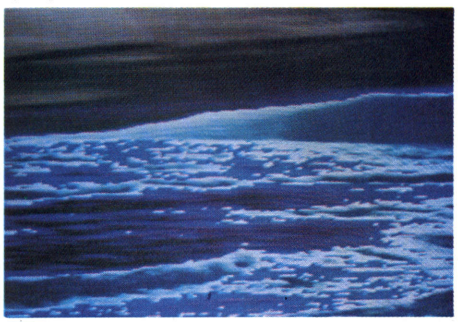
The production efforts for such a format should be unlike those of previous media. Early animation techniques, as well as modern rock promos, often begin with the audio track on which visuals are designed, timed and constructed. Film, on the other hand, uses music scores to enhance visuals. A new kind of artistic relation could be one where the musician and the visual artist create a composition together, just as a lyricist and a musician would a song. The total product would emerge as the artists work through their separate media. A sound could inspire color which then enhances a mood for other sounds. The video piece would be a combined expression where both eyes and ears are in tune to sympathetic move-

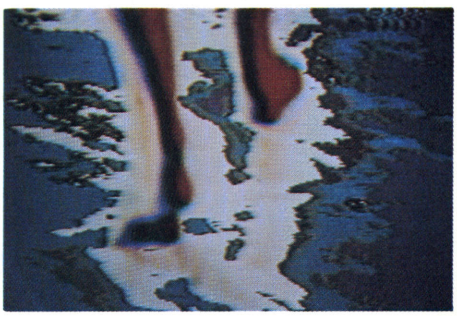
Brainwave readout created for Douglas Trumbull's film BRAINSTORM.

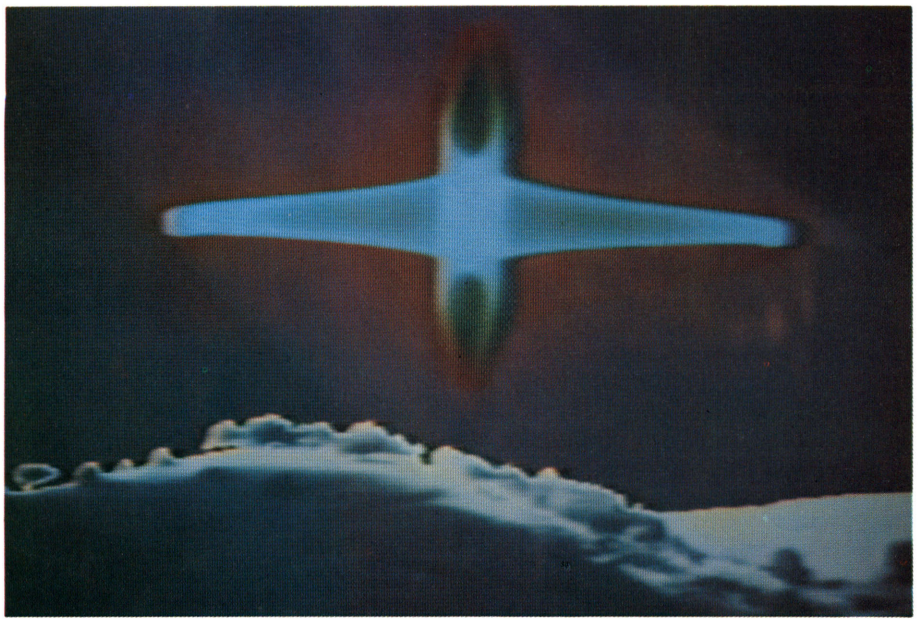


Stock disaster footage reprocessed by Synopsis for a psychic's dream sequence in JUPITER MENACE.

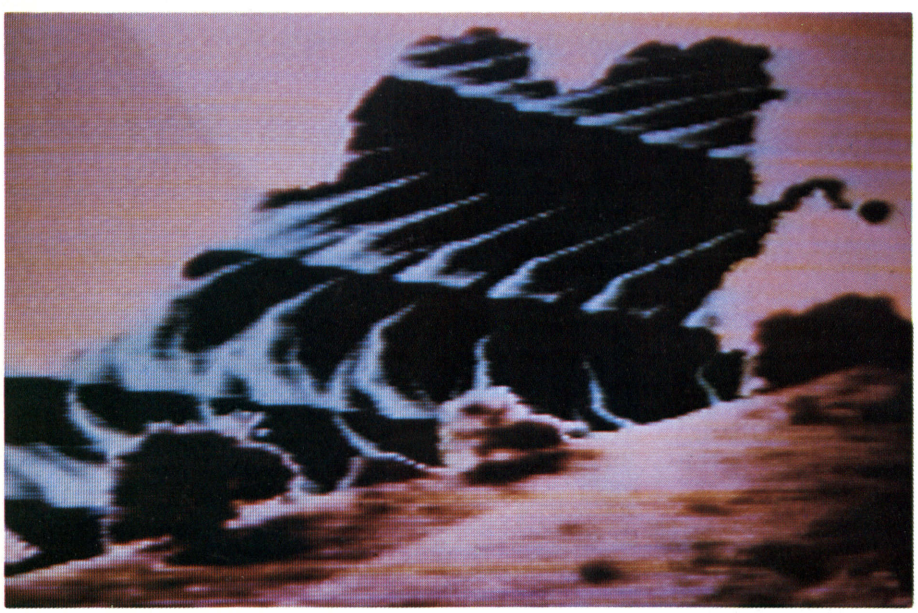
Black and white video images of Santa Monica beach colorized by Synopsis.







Black and white video of Malibu hillsides colorized and combined with electronically generated elements which can move with the tempo of the music.



ments. The subject matter is incidental and could be varied: classicial or electronic musicians performing to softly hued seascapes or new-wave punk groups on stages lined with monitors that pulse and vibrate hard-lined designs to music.

New formats inspire new art forms that were not previously realized through previous media, while new concepts initiate new technology that in turn make these art forms possible. The combination of this art and technology is the key to the video of the '80's.

Real time image processing is equally applicable to more conventional film or television productions. A drawn cartoon character can jump up and down to express emotion, or change hats to play different roles, but it is highly unlikely that a character in conventional animation could stretch, melt and be absorbed into the landscapes, change color to the pitch and amplitude of his own voice when he laughs or take on the texture of rain through his skin when he cries. Neither could a live actor easily have half his features solarized negative with his normal skin tones remaining visible in the lighter areas while simultaneously trailing pastel ghost images as he walks across a normal living room. These kind of effects can be created and recorded in one pass as the actor is performing in live time before the video camera.

Translating effect possibilities to the film producer or art director is successful according to their imaginations and the project's needs. Very often a director is conservative, basing his projected script on effects previously seen in other films or on television. Digital feedback, edge detection, slit-scanned graphics are familiar techniques used in many video studios. When a director asks for a logo to spin and compress into a football, a one-inch editing system, a Quantel and a Grass Valley mixer would be adequate. However when a film director asks for a digital simulation of luminescent lava explosions at the center of the earth, then the delicate combinations of art, technology and inventiveness are in demand. When art forms require

Press the shutter release of the Bolex H16 EL and it's instantly at full speed. Release it, and the shut-off is equally quick. The camera's advanced electronic motor drive delivers a new world of shooting precision and editing ease. There's never a "light" frame to cut out. Rock-steady at any speed from 10-50 fps, it delivers absolutely even exposures of every single frame in the animation mode.

The unique, shock proof silicon cell gives you the same kind of instant response in metering: exceptional sensitivity without the memory or blinding you get with other cells. Simply turn the aperture ring, and two illuminated diodes in the viewfinder tell you when you're right on.

Every advanced facility and capability is part of the H16 EL. You can have synchronized sound with your choice of crystal or sync pulse generator. A bayonet lens mount plus optional C-mount adapter mean you can use just about any lens ever made. (Shown here with the exceptional Kern Vario-Switar 12.5 to 100mm multicoated zoom which cuts flare and reflections down to a minimum.)

With the H16 EL, you needn't worry about running out of power in the middle of a take. Between its standard 0.45 Ah clip-on battery (which drives 400 feet of film) and its optional 1.2 Ah battery (which drives up to 2,000 feet), the most extended shooting durations are amply covered.

A benefit for TV and commercial film crews has been recently added to the H16 EL: a special TV cut-off mask in the viewfinder.

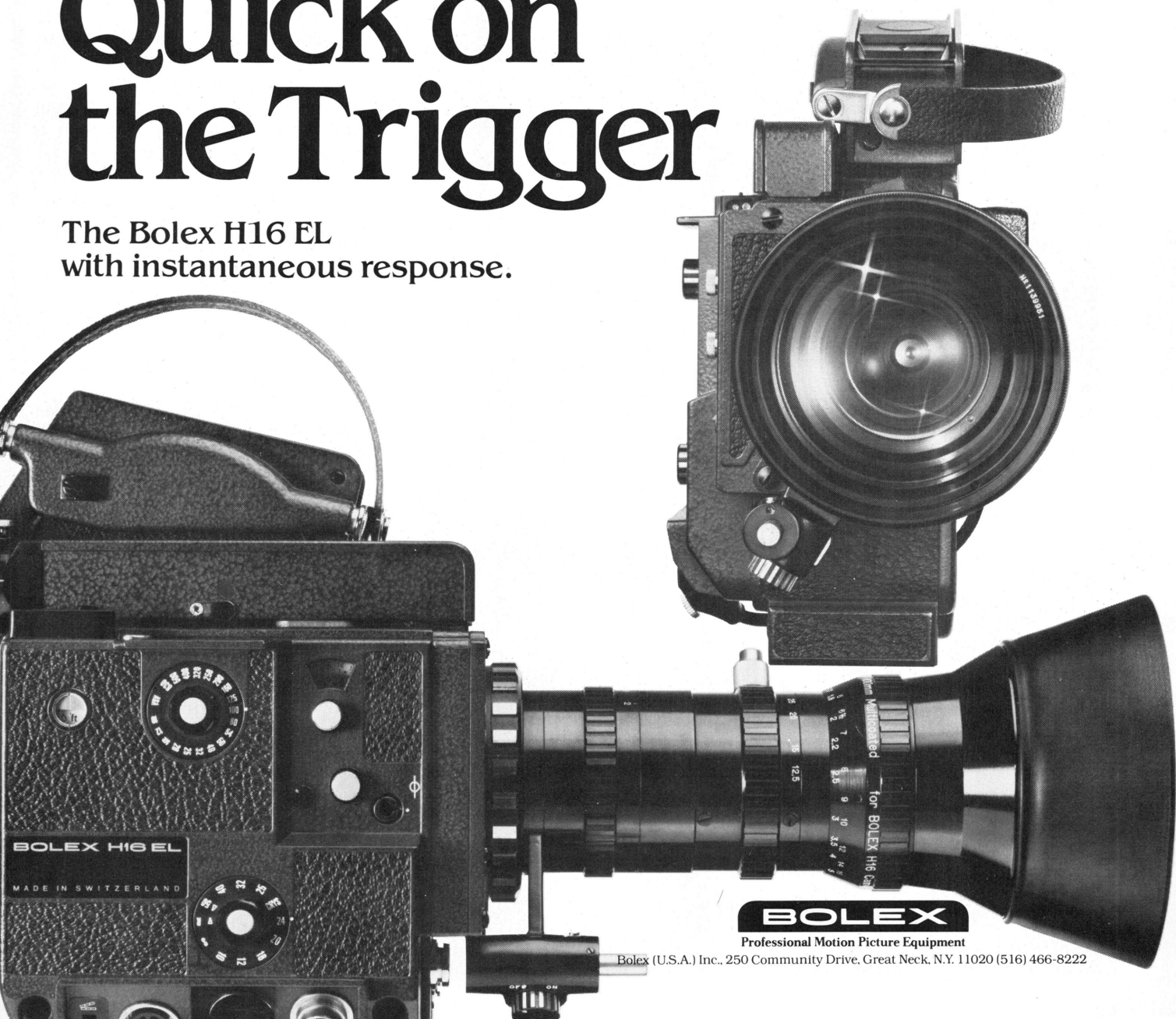
The final word, as with all Bolex cameras, must be quality. The H16 EL's seemingly invincible ruggedness presents a striking contrast to its highly refined, Swiss-crafted precision of detail. A contrast that strikes the ideal balance between reliability and excellence. Matched to a price that makes sense to the profit-conscious working professional.

Visit your Bolex dealer today to put Bolex value to work for you.

Bolex...First in Sixteen.

Quick on the Trigger

The Bolex H16 EL with instantaneous response.



BOLEX

Professional Motion Picture Equipment

Bolex (U.S.A.) Inc., 250 Community Drive, Great Neck, N.Y. 11020 (516) 466-8222

The fastest lightweight news/documentary tripod in the world

Over the shoulder leather carry strap installed • Balanced carry handle installed • Hanger hooks installed • Velcro tie-ups installed • Extra D-ring installed

SUPER STIX

New Prices — SuperStix and Accessories

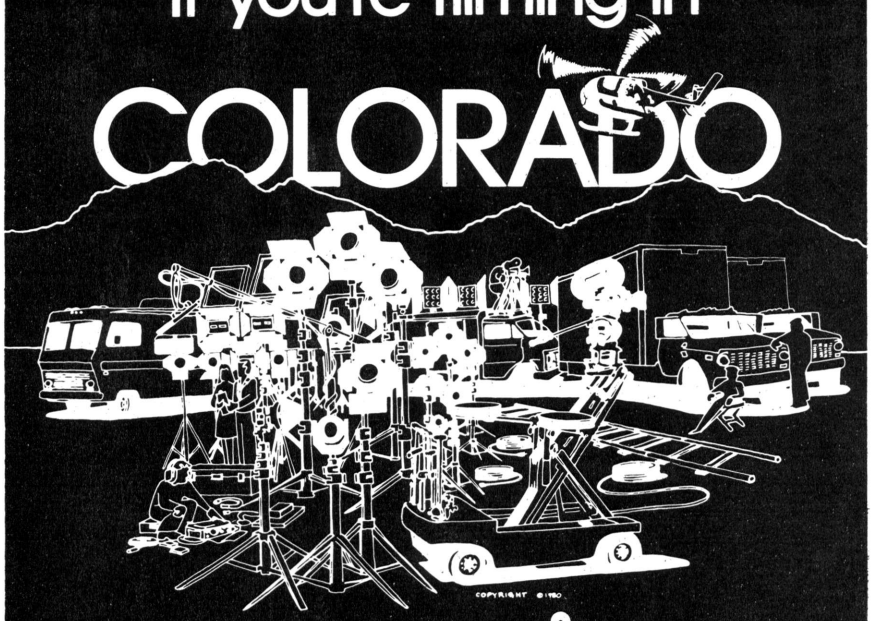
SuperStix legs only	$ 680.
SuperStix with Miller Pro 106 Head	1,442.
SuperStix with O'Connor 30 Head	1,555.

IMAGE DEVICES INTERNATIONAL

MIAMI
1825 N.E. 149 Street
Miami, Fla USA 33181
PHONE 305/945-1111
TWX 810-845-4242
Telex 51-9348

ATLANTA
1651 Phoenix Blvd.
Atlanta, Ga USA 30349
PHONE 404/996-0000
TWX 810-7666-1060

If you're filming in COLORADO



Rocky Mountain CINE SUPPORT
Denver, Colorado

Puts it all together

Call or Write for Information

ROCKY MOUNTAIN CINE SUPPORT 1332 S. Cherokee St., Denver, Colorado 80223

Sales (303) 777-7699 Rentals 777-7690 Production Support 795-9713

new forms of expression, something unique is most likely to occur.

The video synthesis process can be simple or complex according to the effect design. A black and white still photo can be colorized in various levels of softly graduated shades, or it can be textured like a pop art poster graphic. Highly illumined features suggest a dream-like Oriental composition, deep purples, reds and blacks would blend well with any punk rock musician's portfolio. Color film or video can be treated subtly so as to emphasize a mood or feeling. Or it can be highly colorized in rainbow radiations across the melting landscape of a nuclear blast.

Various synthetic patterns can be added to the original video to give it depth and contour. A soft, low frequency waveform can vary the hue control of a video scene creating a synthetic sunset. Blues, yellows and oranges pan the sky with a turn of a knob. Zig-zagging linear graphics can vibrate above the drawing of a radio dial while the announcer's voice modulates their movements. Intricate combinations of waveforms can create near-real oscillations — smoke, fog, ripples in a lake, snow blizzards that move across the screen according to the movements of the original video landscape. Star patterns, mandalas, a continuous repertoire of light-filled cosmic delights can be inverted into swirling black hole vortexes.

Storyboards: Can you make a worm that wobbles when it talks, a lasso that dances to country music, a congregation of hairs that crawl across the screen, get thinner, lighter, tangle and break? Can you make something that looks like . . . birth? Designing patterns to illustrate something real can be tedious. How real can a synthesized bird sound anyway? However, if the "essence" of that bird's voice is translated into music, then both the bird and the synthetic art form are truly valid.

Similarly in video animation. During a psychic's dream sequence translucent slants of candy cane rain imply that something is out of context. The video scene, hardly discernible, is one of destruction. We float through the streets of a flooded town as if we were on a river. Video buildings wave in larger-than-life earthquakes, while misty blue topographic tractors dig through snow fields. These are some of the effects produced for JUPITER MENACE to be released this year (A Youngstar Production, Special Effects Director: Scott Bartlette). The dream sequence, rather than one of the expected horrifying sights, takes a surreal approach. Soft blues and silvers remain dominant rather than fiery reds. Similarly Larry Fast's elec-

THE JOHN BARRY GROUP...

is pleased to announce that as from June 1, 1982 their appointment as exclusive importers/distributors throughout Australia of all Arri products manufactured by Arnold & Richter of Munich and ...
Barry & Warta Pte. Ltd. Singapore is also pleased to announce that as from June 1, 1982 their appointment as exclusive importer/distributor for Singapore, Malaysia, Brunei, Philippines and Taiwan of all Arri products manufactured by Arnold & Richter of Munich.

ARRI

JOHN BARRY
GROUP • AUSTRALIA
JBG

Head Office:
105 Reserve Road, Artarmon NSW 2064.
Sydney Australia.
Telephone: (02) 439 6955
Telex: 24482
Cable Address: Barrysydney

Rental Only:
82 Reserve Road, Artarmon NSW 2064.
Telephone: (02) 439 6955

John Barry Group Pty. Ltd.
Also in Melbourne (03) 699 9055
Adelaide (08) 211 8444
Perth (09) 325 5233

New Zealand:
Barry Cine Sales (NZ) Ltd.
Auckland (9) 77 4552
Wellington (4) 84 4192

Barry & Warta Trading Pte. Ltd.
Suite 706A, Golden Mile Tower
Beach Road, Singapore 0719.
Telephone: 296 0193 / 296 0194
Telex: 38912

FLEXIBLE REFLEX

NOW AVAILABLE FOR RENTAL AT
MARK ARMSTEAD IN HOLLYWOOD

Flexible means interchangeable BNC-R, Nikon, Leica and Canon lenses, and the ability to change from academy to full aperture centering. *Flexible* means provisions for a film clip on precision aligned register pins, viewable by both the operator and video. *Flexible* means right or left eye viewing with unlimited viewfinder positions thru 360° rotation. *Flexible* means your choice of video assists, matte-box rod holders, groundglasses and motors. *Flexible* enough for 2nd unit photography, commercials, high-speed, inserts, animation, motion control and special effects in general. The Fries 35R is a reflex conversion to the reliable pin registered Mitchell GC-STD camera. Basic conversion price of customer supplied camera is $5,800.00 F.O.B. Fries Engineering, 12032 Vose Street, North Hollywood, CA 91605. (213) 765-3600.

fries Engineering

New from G&M

ON-BOARD BATTERY

for Hitachi FP21

- 12V 2AH Battery Pack
- Mounts Directly on Camera
- Eliminates the Need for Anton Baur Adapter Plate (that costs $200)
- Built-in Battery Condition Monitor That Shows Battery Voltage
- Comes with Constant Current Overnight Double Charger

Introductory Offer
BATTERY PACK, $195.00
DOUBLE CHARGER, $125.00

G&M POWER PRODUCTS

6362 SANTA MONICA BLVD. / LOS ANGELES, CA 90038 / (213) 465-8236

tronic music was chosen for the sequence in dramatic contrast to the predicted future disasters.

Another film assignment called for hours of variations of the same effect theme. What would the brainscans of a highly developed medical instrument look like on the monitors in a futuristic laboratory setting? Waveforms unlike forms on other oscilloscopes such as medical, electronic, audio or video waveform monitors were needed to depict the sense and thought patterns of humans. In contrast to the JUPITER MENACE script, BRAINSTORM (Produced by Doug Trumbull) required a technique without the aid of any pre-recorded material. A DNA shape spiraled down a graph. The spiral and the graph were then swirled into a rotating barrel shape as a positive image in a dark field. Then it was slit-scanned around an imaginary corner in negative against a white background, like moving circuit drawings on a board. Twelve hours of variations on patterns of this sort were produced for possible use in the film.

Faces melting, stretching, dividing into pieces. Dancers whirl moebius shapes around themselves as they move and double over into kaleidoscopic forms. These are the new set of characters on the electronic effects roster. They can express new kinds of personalities. Their thoughts and emotions become extensions of shapes, colors, textures and movements. Just as an artist would paint a picture in a particular style rather than take a photograph, so too would the settings for the characters be new forms of ambience that suggest reality without merely reproducing it.

Integrating the familiar with the abstract, the electronic idea into the real video, develops new visual-mind possibilities. Special effects should not be mere glitter, but designed specifically within the concept of the script. The effect becomes part of the subject—the transition between reality and effect part of the plot. The process becomes one of working with the film director, educating this person and ourselves as to what can be done with a particular script idea. Very often it is the freeform experimentation or artistic-technical "play" that develops more dynamic effects than what was required in the original script design. And very often these new visual concepts initiate new technical designs for the system that, in turn, bring about more unusual artistic concepts.

Video effects can coexist with and expand film effect techniques. Once the video is transformed to film, it re-enters the medium of the "silver screen." Video has not abandoned the film format—video can be employed to revitalize its future. ■

SINGLE CAMERA VIDEO
Continued from Page 554

posure and the color balance from scene to scene.

One of the things I learned in shooting the tape episode of "Harper Valley P.T.A." was the necessity of dealing with the logistics of communication between the cameraman and the video controller. Rick had his control unit and monitors set up in a truck or a room that was generally a hundred feet or so from the camera position. He used the truck when we were shooting exteriors and one day when we were on the stage. For the rest of the interior shooting he had his equipment on a cart on the stage but he was still not in visual contact with the camera crew. There were several reasons for this. He preferred a darkened room for viewing the picture monitor, and I confess I was apprehensive about having a monitor out in the middle of the set where everyone could crowd around and discuss the way the picture looked. I made it clear at the outset that the monitor was strictly for Rick and me. The director, Bill Asher, only looked at it a couple of times out of curiosity since he was accustomed to working in film as well as tape. He spent his time on the set with the actors rather than looking at a monitor. Only occasionally did anyone else have a reason to look at the monitor. For example one actress redid her make-up during lunch and Rick was able to show the make-up man that her cheeks were too red on the monitor. Or someone from wardrobe might come to Rick during lunch to find out what someone was wearing in a previous scene by replaying the tape. This was the only use we made of the instant replay capability of tape. We were all too aware of the amount of production time that can be eaten up by replaying takes on the set.

In order to talk to Rick I had to use an intercom or else I had to spend a lot of time walking back and forth between him and the camera. Next time around I would probably try to simplify this arrangement by putting a monitor near the camera and by using a better form of intercom. Our intercom system consisted simply of a squawk box mounted on the camera. This was fine if the communication consisted of "Roll tape!" and "Speed!" It proved a bit awkward though when I was at the monitor with Rick using the intercom to refine a lighting set-up while the actors were going through a final rehearsal. The day Rick used a truck while we were shooting on stage, he set up a monitor for me in a little room adjacent to the set so that I didn't have to go all the way out to the truck to see a monitor. The intercom system went to the camera as well as the monitor, and conversations between me at the monitor

fax ANIMATION CAMERA STANDS — THREE SIZES fax

ANIMATION DISCS — LAYOUT TABLES

INK & PAINT BOARDS — INK & PAINTS

fax

animation camera stands

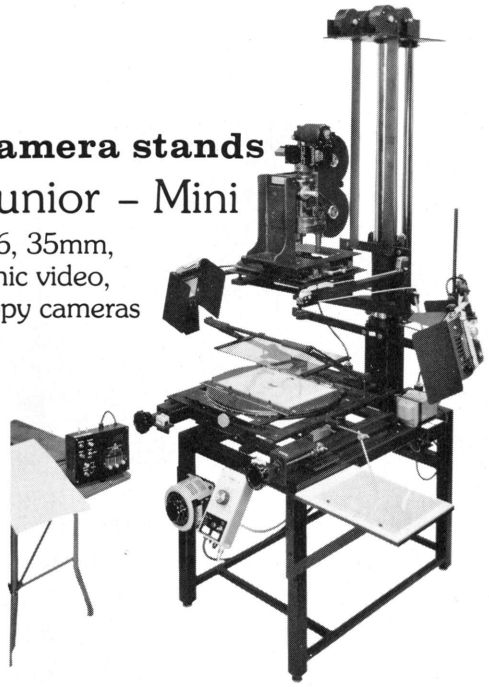
Senior – Junior – Mini

for 8, 16, 35mm,
electronic video,
and all copy cameras

Versatile
Accurate
Productive

For professional animation (rotoscope, rear projection when needed), titling, and for filmstrips.

Write or phone us to fill your equipment and supply needs.



fax company

374 S. Fair Oaks Ave., Pasadena, Calif. 91105 — 213/681-3084

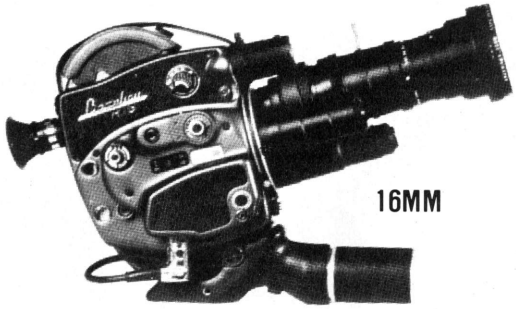
fax PAPER - CELS - FIELD CHARTS - AND MORE fax

Beaulieu

INCONTESTABLY, THE FINEST!

NEW 6008S — 6008PRO

- Schneider 6 to 70mm fl.4 Zoom (Macro)
- Interchangeable "C" Mt.
- 200 ft. Cartridge + Rewind
- Variable Shutter. Lap-dissolve, Time Lapse
- LED Monitoring System
- Mirror Shutter Reflex Viewing (100% light)
- Quartz Crystal Control. (6008 PRO).
- fps speeds: 4 to 80 + Single frame



16MM

R16B PZ Automatic w/12 X 120 Angenieux Zoom
R16B Reflex Control Mono
R16B Reflex Control Turret
R16 ENDOSCOPIC CAMERA

Exclusive U.S. Distributor

Otto Hervic/Beaulieu

4907 Valjean Avenue, Encino, California 91436 • **(213) 981-7457** • **(213) 981-5810**

Canadian Dist. Adams and Associates • 1645 Bank St., Ottawa, Canada K1V7Z1

Volume Discount 16mm Release Prints.

* Send us your internegative or CRI for color positive release printing.
* Reversal Ektachrome Printing. * Realistic Turn-Around-Time.
* Realistic Prices . . . call for quotes.

512/472-6926

photo processors inc.

P.O. Box 2116A, Austin, Texas 78767

IF YOUR LIGHTING NEED IS SMALL LEE WONT MAKE A BIG PRODUCTION OUT OF IT. OUR STAFF OF EXPERIENCED PROFESSIONALS WILL MAKE SURE YOUR NEEDS ARE KEPT IN PERSPECTIVE... THAT YOU GET WHAT YOU NEED...WHEN YOU NEED IT... WITHOUT HASSLE. EVEN IF ALL YOU NEED IS SOME FRIENDLY ADVICE... ASK LEE, WHERE SERVICE IS OUR ONLY "BIG PRODUCTION."

LEE AMERICA

LEE LIGHTING AMERICA LTD.
534 WEST 25 ST., N.Y., N.Y. 10001
(212) 691-1910

and Rick in the truck came out over the camera speaker while rehearsals were going on. I think Rick had assumed we were going to use earphones, but we all had rejected the notion of wearing earphones as too confining. I would definitely reconsider it next time around.

In addition to setting the exposure for the exteriors as I have described, Rick performed several other functions during the shoot. First of all he routinely did white balance, black balance and registration checks on the camera. The Panacam automatically registers itself constantly during shooting, but Rick felt that it was advisable to do additional registration checks a couple of times a day. He would take two minutes with a registration chart while we were doing something else and check to make sure that the registration was not off. He said there were certain kinds of geometric distortions which could conceivably not be corrected by the automatic registration system, but I don't think he ever found anything wrong with the registration. Similarly he used a white napkin for doing the white balance during the production. If we were outside and the light was changing, he might check white balance as often as every ten or fifteen minutes. It was simply a matter of taking a few seconds to point the camera at the white napkin and push a button. On the stage he would only do it once every few hours.

While I was lighting a set-up Rick would call my attention to any problem he might see. Mainly this was a matter of hot reflections. We had to use a lot more dulling spray shooting with tape than we did with film, and the next time around I would probably have surfaces dulled before we even started lighting a set. We never had any problem on the set that we couldn't solve with dulling spray but we did spend more time dulling things after they were lit than we should have. Outside we had one shot where we got streaking as a result of the sun reflected in a car window. At a certain point in the shot the angle of the window was such that the sun was reflected right into the camera lens and there was just nothing we could do about it.

On some of the exterior set-ups Rick was able to use the black stretch to bring out shadow detail. On the stage I controlled everything with the lighting and he just let the camera stay set at its normal setting. Outside, however, it was impossible to restrict the contrast range of the scenes and Rick proved very useful. He would set the exposure for the highlights or the flesh tones an often use the black stretch to bring up the shadow detail. It's a bit like flashing film except that a dead black will stay dead black and the highlights are not affected.

Q&A

SPONSORED BY

PROFESSIONAL MOTION PICTURE EQUIPMENT ASSOCIATION

pmpea

This organization's membership is made up of manufacturers and dealers throughout the world. *Direct all Q&As to AMERICAN CINEMATOGRAPHER, P.O. Box 2230, Hollywood, CA 90028.*

Q How did Gordon Willis achieve the incredible look for the fantasy sequences in "Pennies From Heaven"? They had an "aged" look, yet exhibited no apparent increase in grain.

A Each sequence had different photographic values. No mechanical means were used to achieve an overall "look". Lighting, color, and shot structure were applied at what he felt were appropriate levels. All film was developed normal.

Q If a fan is needed inside a lighting fixture to cool it, can it be muffled without being disconnected or without restricting air flow while shooting?

A You must remember that fans are utilized to perform functions that cannot be achieved by normal convection cooling. The sound you wish to muffle is not necessarily the fan itself, but is the volume of air passing over the object. This produces the greatest unwanted noise. Generally, fans are selected that produce satisfactory air-flow in a "worst case" situation.

Unless it is possible to locate the object producing the unwanted noise at a distance from sound sensing devices, the alternative is to place a resistor in-line of the fan, limiting the current and producing only the required air-flow. The size and type of resistor should be determined by someone familiar with the fan and the task the fan must perform. Simply muffling the fan can cause damage to expensive components which need constant cooling.

Q Regarding the rated color temperature of daylight—in 1966 daylight, as I remember, was always rated at 5800° Kelvin. Nowadays it seems that everybody has standardized on 5500° Kelvin. What has brought about this change? Who determines the standards? Has some committee (if so when and where) decided that 5500° looks better than 5800° or does it have something to do with an actual change in daylight characteristics? Would this possibly have anything to do with the studies made by the University of California at Los Angeles which show that an increase of air pollution distinctly lowers the prevailing color temperature of daylight?

A Color temperature describes a visual aspect of color—the value given for sunlight is 5400°K. This is specified as average summer sunlight at noon in Washington, D.C. Daylight is a combination of sunlight plus skylight and, while always higher than sunlight alone, will vary depending on the sun angle, the condition of the sky, and amount of clouds, haze, dust particles, etc. Photographic daylight has been standardized at 5500°K. This is an average of what photographers encounter in typical photographic situations. It also matches the color temperature of the high-intensity sun arc.

The group that was formed to insure effective, efficient, and compatible study of the technology of color is the Inter-society Color Council. This organization is a group representing 20 societies that contain a diversity of disciplines, but have a common specific need to question the technical aspects of color. The organization has been in existence for more than 40 years and contains representation from societies such as the SMPTE and the Illuminating Engineering Society and Optical Society of America, etc.

Q Where can I find what all the numbers and letters mean that are on the film label of my motion picture film?

A Eastman Kodak Company publishes a chart called, "The Anatomy of a Film Can Label." This chart is available as a Wall Chart from Eastman Kodak Company and reproduced in pocket size in the Cinematographer's Field Guide, Kodak publication H-2. Both of these publications are available directly from Eastman Kodak Company, Dept. 454, Rochester 14650. ■

Lloyd's

Camera Exchange

USED EQUIPMENT LISTINGS

35mm CAMERAS

ARRI 35 TECHNISCOPE $2,450.00
ECLAIR CM-3, 3 lenses $2,250.00
BELL & HOWELL 2709 CAMERA $3,750.00
MITCHELL BNCR w/20-120 zoom
..... $29,950.00
MITCHELL MARK II, 4 mags, 3 motors, 5 lenses $24,500.00
ACME 35 PRINTER $11,500.00

16mm CAMERAS

CP16 REFLEX CAMERA OUTFIT w/12-120 Angenieux $4,450.00
CP16 w/reflex Angenieux, 12-120 zoom
..... $2,950.00
ECLAIR 16mm NPR, 12-120 Angenieux, Mag Crys motor $4,950.00
ARRIFLEX S CAMERA w/3 lenses $1,950.00
BELL & HOWELL 70, Dr body $195.00

EDITING EQUIPMENT

4 GANG 16mm, w/mag $125.00
16mm BUTT SPLICER $75.00
PEDESTAL 16-35mm SPLICER ...$895.00

LENSES

LARGE SELECTION OF ZOOM AND PRIME WIDE-ANGLE LENSES FOR CP16R!

60-70% OFF LIST PRICE!!!

Write or Call for *Bargain* Prices!

MISCELLANEOUS ITEMS

NAGRA III sync $1,950.00
65mm 3-D CAMERA, TODD AO, w/3-D lens
..... $42,000.00
BELL & HOWELL mod 35 printer $1,650.00
J-4 CONTROL KIT $1,250.00
MARK II BLIMPS $6,000.00
16mm mags—MITCHELL ....$69.50 .... 3 for $150.00
MILLER PRO HEAD, w/tripod $495.00
35mm SOUND PROJECTOR, portable.—NEW IMPORT $2,950.00
ARRI 35mm BLIMP (CINE 60) ..$1,200.00
MOVIOLA 16mm EDITOR $1,650.00

LARGE INVENTORY OF BOLEX REFLEX CAMERAS

Lenses — Motors — Blimps — Tripods

For additional information call Mel or Jim; or write —

Lloyd's Camera Exchange
1612 N. Cahuenga Blvd.
Hollywood, CA 90028
(213) 467-7956

TIFFEN ... HI-IMPACT Filter Cases

It's the unique new space-saving way to carry and store your filters safely. Inside: Hi-density foam insert slotted to hold, support and protect seven series 9 or seven 3x3 filters. Outside: Super tough ribbed ABS virgin plastic. Spring lever latch for ease of opening and lock-tight protection. Provision for lock and key. Bright yellow, easy to identify, easy to handle. Recessed top and legs make it easy to stack. Stock No. 933.

Write Department AC for New Professional Brochure and Price List.

TIFFEN®
90 Oser Avenue Hauppauge, New York 11788
(516) 273-2500, Telex 96-7748

NOW, ONE MICROPHONE CAPTURES IT ALL.

The Sennheiser Telemike Electret Microphone System.

Its unique modular design provides all the flexibility and precision of a collection of separates—from omni to super cardioid, spot to shotgun, telescopic boom to tie-clip lavalier.

All, at a fraction of the price of comparable separates.

And all, with the most advanced electret technology available: our unique back-electret.

See your Sennheiser dealer for details. And capture it all.

All components available separately or as a package.

SENNHEISER
ELECTRONIC CORPORATION
10 West 37th Street, New York, N.Y. 10018
(212) 239-0190

© 1981, Sennheiser Electronic Corporation (N.Y.)

I should point out that the camera control unit for the Panacam offers a whole range of controls that Rick and I didn't even bother with for this shoot. First of all the lighting style for the series did not require any special image processing techniques, and secondly my basic inclination is to leave the camera on normal settings and use lighting and filtering to achieve the effects I want. The things that seemed different to me about the look I got on tape as opposed to film were the contrast and the saturation of the colors. With tape the contrast was greater and the colors were more saturated. I noticed this on the monitor during the test, but I gathered this was to be expected with video. Everyone was so pleased with the way the tests looked that I did not see the need to try to match the contrast and color saturation of our film episodes at the risk of messing something else up.

PRODUCTION PROCEDURES

We shot for five days exactly as we would for film. I would set my key light to 200 fc and then set all the fill light by eye, referring to the monitor to make sure the video camera was seeing it the way I expected. I may have taken just a hair longer to light because I tended to double check things with the monitor, but we completed the shooting on schedule with no problem at all. I never saw any kind of dailies during the production—only what was on the monitor as we were setting up or shooting.

We only had one lighting set-up that was anything out of the ordinary. That was a light change in a night interior when the lights are turned on in a restaurant. I lit the set to 200 fc and then turned everything off except one fill light. I checked the effect on the monitor and it looked fine. Later out of curiosity I measured the light during the first part before the lights are on and it was 32 fc.

One day on the stage we used two cameras for a crowd scene with some dancing just like we would use two cameras with film in order to get more coverage in the same amount of time. The two tape cameras were each recorded on separate tape recorders for editing in post-production, and we made no attempt to do any editing live during the shooting. We did color balance the two cameras carefully, and Rick even used the switching panel in the remote truck to do a split screen so that we could see half of each camera on the screen simultaneously. Two monitors side by side probably would have been better since we could have seen the entire shot from each camera—provided the monitors were somehow matched. I recall once when I was shooting FUTUREWORLD at NASA and we

had a control room with 100 monitors and no two fo them were the same. I am still a bit apprehensive about relying on the monitor to tell you exactly what you are getting on the tape. The monitor we had on the set was a high resolution Techtronics monitor, and I certainly would never just use a normal TV set; but even with a good monitor I think the cameraman's eye is probably the best judge of the lighting.

We recorded sound in two ways. Rick recorded it on the 1" videotape and our normal sound crew recorded it on a Nagra at the same time. We used clapsticks as a sync reference for the Nagra and recorded a 60-cycle sync pulse. Compact Video can resolve a 60-cycle pulse as well as a 59.94 which is the actual field rate for video. As it turned out the ¼" sound from the Nagra was never used. All the editing was done from the production track on the 1" videotape, and the ¼" track was just put in the vault as a back-up.

At the end of the day the 1" videotape was delivered to Compact Video where three ¾" cassette transfers were made of the selected takes. One cassette went to the editor first thing in the morning, a second to the producers and the third to the network. I myself never saw a cassette until I saw a cassette of the edited show, and I thought that one looked awful. It was all washed out and looked about like what you would get if you flashed film 50%. Art McLaird, the producer, assured me that this was not what the 1" master looked like and apparently the loss of quality between the 1" and the ¾" cassettes was something of a problem in the evaluation of the dailies by people who had not seen the original. The problem was compounded of course by the fact that the dailies were viewed on ordinary TV sets in the executives offices. With film dailies in a decent projection room and a decent print, you know what you've got; but with poor transfers on ordinary receivers in an office you really don't know what you're dealing with.

The producers would see the dailies first thing in the morning and then by the end of the day the editor would come over from the off-line editing facility at Compact Video to show the producers a first cut of everything that had been shot. The regular editor for the series worked with a video editor at Compact on the off-line editing. The feeling was that the simplest way to handle the show was to combine the experience of the film editor who knew the show with a video editor who knew the equipment. Probably if the whole series were done on tape, the film editor would learn to operate the off-line editing equipment.

Even more importantly next time around the off-line editing will probably be

PHOEBUS
when you shoot
in No. California & Nevada

RENTALS/SALES/SERVICE
MOTION PICTURE, VIDEO
LIGHTING & GRIP EQUIPMENT

- Complete line of professional quartz and HMI lighting—rental or sale
- Trucks, generators
- Delivery service
- Roscolux and Lee filters
- Complete line of GE, Sylvania and HMI studio lamps in stock
- Grip equipment & production supplies

PHOEBUS CO., INC.
145 Bluxome St.
San Francisco, CA 94107
(415) 543-7626 Telex 340-901

50 Freeport Blvd., Suite 3
Reno/Sparks, NV 89431
(702) 359-4519

ICECO
International Cinema Equipment Company

SELECT FROM OUR LARGE STOCK OF PRE-OWNED CINEMA EQUIPMENT. ALL ITEMS CHECKED IN OUR SHOP. SATISFACTION GUARANTEED. WRITE FOR OUR CATALOG. TRADE-INS ACCEPTED.

CAMERAS
Bolex Pro outfit with zoom, charger, two magazines, cases, cables, and more $ 3,995.00
Arriflex 16 BL outfit with 12-120, three magazines, cases, sound, much more 7,500.00
CP 16A with 12-120, two magazines, crystasound, case 2,995.00
Auricon conversion body, wired mag 395.00
LW 116 with 12-120, two magazines, case, MA-11 2,350.00
B&H 70DR, three lens turret, case, filter slot 175.00
B&H 70HR, like new (accepts motor and 400' magazine) 695.00
Cannon Scoopic, macro zoom, case 595.00
Arriflex 16S outfit, three primes, magazine, torque motor, matte box, and more 2,995.00
Mitchell 16 outfit, loaded 4,400.00
Mitchell GC 35mm outfit, loaded 3,950.00

EDITING
Moviola UL 20 CS 16/16 upright $ 1,495.00
Moviola L20 16 viewer 550.00
Moviola LPVS 35/16 preview 1,495.00
Moviola UD-20-S 35/35 upright 2,950.00
Prevost six plate flat bed, 16mm 4,950.00
Prevost eight plate flat bed, 16mm 5,950.00
Long shaft rewinds, pair 60.00
Maier-Hancock hot splicer 16/35 199.50
Maier-Hancock hot splicer 8/16 125.00
Guillotine 16mm splicer 125.00
Guillotine 35mm splicer, new 175.00
Moviscope viewer, 16mm 149.00
Five gang 16mm moviola synchronizer 250.00
Stanco 8/16 electric splicer 100.00
Two gang 16mm synchronizer 90.00
16mm Showtimer 90.00
Two gang Moviola 35mm synchronizer 89.50
Two gang Moviola 35/16 synchronizer 110.00
Precision 35/16 optical sound reader 135.00
Precision 35/16 magnetic sound reader 175.00
Rivas splicer, 16mm 55.00

SOUND
RCA PR.32 optical recorder with three 1200' mags, 16mm $ 6,900.00
RCA FR-10 16/35 pick up recorder 7,500.00
Otairi reel to reel ½" quad recorder/player 3,000.00
Otairi reel to reel ¼" full track record/play 995.00
Otairi reel to reel ¼" two track stereo record/play 995.00
Western Electric console, as is 600.00
Magnasync 2200 recorder/player, 16mm 2,500.00
Magnasync 602 triple dubber/interlock/rac/control 3,500.00

PROJECTION EQUIPMENT
International GS 35 HX portable 35mm with 700 watt xenon/400 watt halogen combination, NEW $ 6,475.00
International 104 35mm portable system, NEW economy 3,300.00
DeVry XD special rebuilt, 5000' capacity, 35mm 1,995.00
Century mobile interlock system, xenon lamphouse, complete, rebuilt, 35mm 7,450.00
Simplex XL mobile interlock system, xenon lamphouse, rebuilt, 35mm 8,500.00
Sonorex double band 16/16 interlock, reconditioned 2,900.00
Siemens double band 16/16 interlock, reconditioned 1,750.00
B&H 2585 Autoload 16mm sound projector, NEW 895.00
B&H JAN with 900 watt xenon lamphouse, rebuilt 16mm 1,950.00
Norelco AA II 35/70mm projector, reconditioned 6,500.00
Tokiwa T-60 portable 35mm, NEW 4,695.00
Eiki RMO 16mm table top, like new 495.00

MISCELLANEOUS
GE Marc 300/16A bulbs, surplus, NEW $ 36.00
GE Marc 300/16 bulbs, surplus, NEW 49.95
2", 2½", 3", and 4" new projector lenses for B&H, Viewlex, Graflex, etc 35.00

LENSES
12-120 AZO finder, good $ 795.00
12-120 AV30 finder, good 695.00
9.5-9.5 AV30 finder, case, shade, filter, A-1 1,495.00
12-120 Arri mount, sharp 1,595.00
12.5-70 Angenieux, Arri mount, good 550.00
17-85 Berthiot C mount, finder, good 295.00
10mm Angenieux C mount, fair 100.00
15mm Angenieux C mount, good 150.00
25mm Angenieux C mount F1.4, sharp 100.00
50mm Angenieux C mount F2.5, sharp 150.00
75mm Angenieux C mount F2.5, sharp 150.00
15mm Schneider Xenon, Arri mount 250.00
25mm Schneider Xenon, Arri mount 200.00
50mm Schneider Xenon, Arri mount 250.00
75mm Schneider Xenon, Arri mount 250.00
90mm Kilfit, Arri mount 200.00
150mm Kilfit, Arri mount 250.00
300mm Kilfit, Arri mount 275.00
400mm Kilfit, Arri mount 275.00

MISCELLANEOUS LABORATORY EQUIPMENT
B&H J printer, Peterson sound head, as is $ 1,295.00
B&H J printer, Hurletron color head and reader, as is 1,095.00
HFC 16 to S8 reduction printer, as is 1,795.00
B&H D printer with sound head and large flange 35mm, as is 2,500.00
Clean Air ultra sonic cleaner, as is 995.00

TV EQUIPMENT
GE PJ-500 Large Screen Video Display projector $ 5,000.00
GE PJ-700 Large Screen Video Display projector, COLOR 37,500.00
RCA TP-6 16mm telecine projector, optical/magnetic, interlock, good 1,995.00
Eastman 275 16mm telecine projector 3,750.00
Phillips 35mm broadcast telecine, stereo, rebuilt 12,500.00
RCA TP-15 multiplexer 4,500.00
RCA TP-8 slide projector 2,500.00
Spindler late model slide projector 1,950.00
Ampex VPR 7800 with 1" helical scan, as is 895.00
Ampex VPR 5800 with 1" helical scan, as is 195.00
Conrack 17" color monitor 750.00
RCA 17" color monitor 670.00

All items used unless noted. Check on extended warranty. Trade-ins accepted. Installations worldwide. Catalog available.
Prices do not include shipping charges. Prices subject to change.

6750 NORTHEAST 4th COURT / MIAMI, FLORIDA 33138 U.S.A.
TELEPHONE: (305) 756-0699 756-6590 TELEX 810/519562

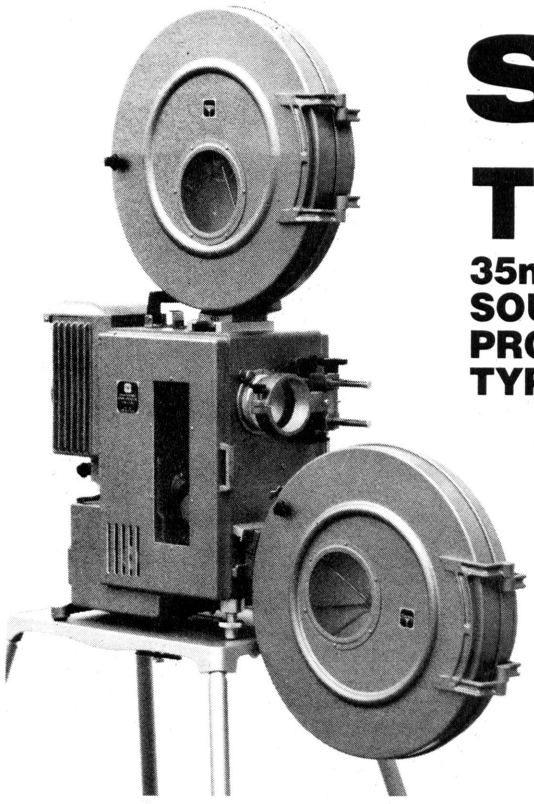
VCR
IN-CASE OPERATION

SPEED UP YOUR SET-UP...
OPERATE YOUR VCR IN THE CASE!

- SLIDE-OFF LIDS, GROOVED TRACKS
- REAR CABLE ACCESS
- ETHAFOAM SOUND PROOFING
- VENT SPACE UNDERNEATH
- AIR FLOW THROUGH REAR

THE INCASE BY EXCALIBUR.
CALL FOR INFO
213/899-2547

EXCALIBUR INDUSTRIES
12427 Foothill Blvd., Lake View Terrace, CA 91342 · (213) 899-2547



SALE!

TOKIWA
35mm PORTABLE
SOUND
PROJECTOR
TYPE T-60

INCLUDES:
1 External Amplifier
1 External Speaker w/Cables
1 1500W Incandescent Lamp
2 Magazines
4 Carrying Cases

NEW! ONLY $3,900^{00}

Limited to merchandise on hand, subject to prior sale. California residents add 6% Sales Tax
F.O.B. Hollywood, California

CINE-PRO
(213) 464-3800
RENTALS * SALES * SERVICE
940 NORTH ORANGE DRIVE
HOLLYWOOD, CALIF. 90038

done in-house rather than at a post-production facility. The one big problem that this production had was in the scheduling of post-production facilities and delays caused by the fact that facilities were not available when they were needed. Because the decision to shoot on tape was made so late in the season at a time when video facilities were already well booked up, it was not possible to schedule the post-production work the way it should have been done. We managed to book a couple of 8 hour days of off-line editing at Compact Video during production, but the rest of the time during the shoot the editing had to be done during the night shift. After the show got past the first cut things got even more chaotic. Fortunately there was not a great deal of pressure in terms of a delivery date or an air date, because there were a couple of weeks during the post-production when nothing could be done at all except sit around and wait for the next booking at the editing facility.

According to Art McLaird the whole key to doing a show on videotape is organization and scheduling in post-production. This show had been budgeted at $37,000 less than it would have cost on film, but in reality it cost only $3,000 less because of the problems in post-production scheduling. Normally a producer planning to shoot a series on tape would have sufficient lead time to get appropriate bookings at the post-production facility, but Art feels that the difficulty of getting bookings may force the studios into buying their own video editing equipment. It is also possible to rent certain kinds of off-line editing equipment for in-house use at rates that are low enough to be cost effective.

The off-line editing facility at Compact Video used for the tape episode of "Harper Valley P.T.A." was a fairly sophisticated editing bay which was capable of doing wipes and dissolves as well as fades and straight cuts. It produced an edit decision list which was used to auto-assemble the show in the on-line editing session. The off-line facility cost less than $150 an hour, and the total amount of off-line editing time was probably around 70 hours. The on-line editing time was probably about 5 hours. It was mostly auto assembly with an occasional trim or color correction here or there.

Art McLaird figures with proper scheduling the entire production of a single camera videotape show could be complete in less than four weeks. You shoot for five days and have a first cut one day after the last day's dailies. Allow another week for three re-cuts of the show, which Art figures is fairly relaxed. The on-line editing takes a half day, and then the show is turned over to music and effects. Effects

cutting for this show was done on the PAP system at Glen Glenn rather than using the normal film sound effects cutter. In either case the effects can be cut a good bit faster than the score can be composed and recorded. Ten days to two weeks is what Art would allocate for music and effects. Mixing the tracks, laying the mixed track back onto the edited master and making dubs for delivery could all be done in a day.

The savings come in the elimination of film laboratory expenses and in the reduction of post-production time—again provided things can be scheduled efficiently. If a show is heavy in opticals, there can be additional time and cost savings. "Harper Valley P.T.A." has very few opticals so this was not a significant factor. It might be interesting to note that Art figures the next time around he would use a character generator to create additional title cards during the on-line editing session rather than having conventional cards made up as he did for this show.

In addition to the scheduling problems, Art experienced some frustration in the procedures required for re-cutting the show in the off-line editing. Basically the approach was to lay down everything that had been edited up to the point where a change was to be made. For someone like Art who is accustomed to having his film editor just wind down to the place in a reel and make adjustments, the standard procedures for off-line video editing can be frustrating. As he puts it, "It's like what you experience with a home video cassette recorder. You stop the machine, and you have to sit there while it backs up and recues before you can do anything else. Sometimes you feel like just jumping in there physically and saying, 'Let me just touch it; I want to touch it.' I think that is the frustration film people feel when they find themselves no longer handling the material. Instead of getting their hands on something, now they are pushing buttons and waiting for the machine to take over and do its job."

On the other hand Art also experienced the speed and simplicity of some electronic processes as for example when he noticed some scenes looked a bit red during the on-line editing session: The editor would say, 'No problem,' and he'd push a button and it would be fine."

Art believes videotape is ideally suited to shows that are shot on sets. He thinks it is a waste to shoot a television series on film if you are working on the stage most of the time. A series with a lot of location work or a two-hour movie of the week is another matter in his estimate, however. He feels film is better suited for such productions partially because of the conven-

COLUMBIA COLLEGE

COLUMBIA COLLEGE

Approved for Veterans

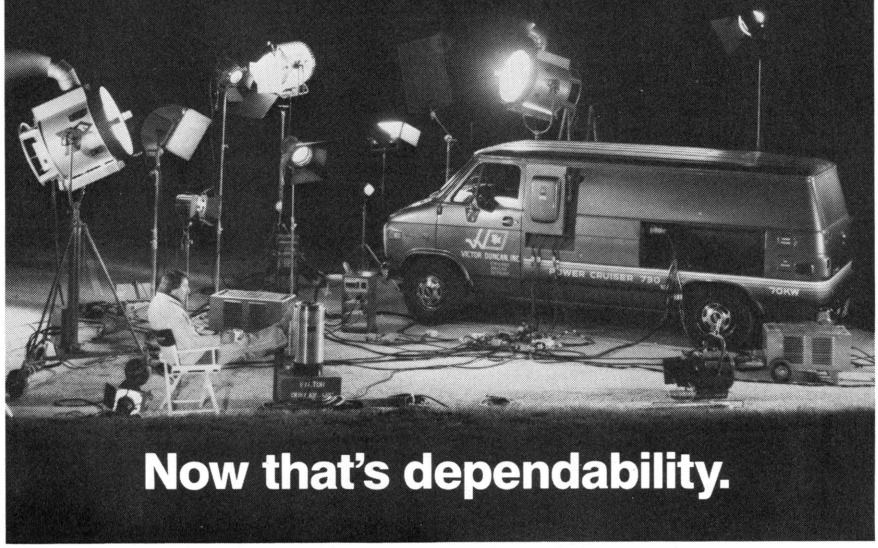
A study of the Motion Picture and Television Arts and Sciences within a degree program, taught by a distinguished faculty.

Now Registering. Write for a descriptive brochure.

COLUMBIA COLLEGE

925 No. La Brea Ave.
Hollywood, Calif. 90038
851-0550

70,000 watts of quiet location power, and enough to spare to keep the coffee hot!



Now that's dependability.

The van mounted Power Cruiser 730 is rated at 70KW, and provides quiet, dependable power for all your location requirements. This power house generator also features automatic voltage and frequency electronically controlled at 60Hz, for use with HMI lighting.

The Power Cruiser 730 is just one of a complete line of portable power units available from Victor Duncan, Inc. We have a size to fit any location requirements. Contact your nearest Victor Duncan office for complete details on the generator to answer your power needs.

Generators · Lights · Electrical · Gels · Support · Accessories

VICTOR DUNCAN, INC.

Rentals, Sales, Service

CHICAGO
661 N. LaSalle, Chicago, IL 60610 (312) 943-7300
DALLAS
2659 Fondren, Dallas, TX 75206 (214) 369-1165
DETROIT
32380 Howard, Madison Hgts., MI 48071 (313) 589-1900

o'doherty technology inc.
Technical Expertise for the Professional Cinamatographer

THEY'RE HERE!

Mike Melito and Louie Tullo (formerly of Angenieux) have arrived at O'Doherty Tech.

Now we offer top notch lens service including Angenieux, Zeiss, Canon, Fuji, and Schneider. We also service ENG, and Broadcast lenses.

Give us a call for further details.

1303 MAIN ST. • PORT JEFFERSON • LONG ISLAND, N.Y. 11777 • (516) 331-1395

Why does a filmmaker in Nairobi, Kenya, send his lens to North Hollywood for repair?

Century Precision Optics . . .
Where every lens is optically bench tested for maximum sharpness;
Where most lenses receive 24 to 48 hour turnaround;
Who have over 35 years service to the international motion picture and television industry;
And who also have an East Coast office for your convenience.
For further information, contact Ed Hinshaw, West Coast, and Jeff Giordano, East Coast.

Century precision cine/optics
A DIVISION OF CENTURY PRECISION INDUSTRIES, INC.
10661 BURBANK BLVD., NO. HOLLYWOOD, CALIFORNIA 91601 TELEX: 66-2419 (213) 766-3715
17 WEST JOHN STREET, HICKSVILLE, NEW YORK 11801 (516) 931-6320

Big New Rental Place — Same Old Solid Service.

CLAIRMONT CAMERA

4040 Vineland Ave., Studio City, California 91604 · (213) 761-4440

ience of film for location work and partially because of the look he thinks you get with film.

One interesting reaction from Art about the look of the video episode of "Harper Valley P.T.A." may add a note to all of the debate about the "film look." Art was very surprised by the increased depth of field. He said it was the first time he had ever seen the other side of some of his sets on the screen. He didn't say he was unhappy with the increased depth of field, but he did say he felt that because he was seeing so much more detail in the set he was more aware that it was a set. It was as though the shallower depth of field with film created a bit more impressionistic rendering of the set which might help a viewer accept it as real. I too was struck by the effect of the increased depth of field, and on one exterior I felt the video image almost looked phoney because it was so sharp in the background. The sharpness didn't fall off naturally as it would with film, and it almost looked as though the background was a two dimensional backing instead of the real thing. This may have been a function of the detailing or edge enhancement as well as the depth of field, because I never noticed the same effect when I shot a special on 16mm negative which probably has a depth of field comparable to that of a ⅔" video camera.

I recently did a test with the new Eastman color negative in which we shot a night exterior with about 4 fc at f2. It was developed normal and printed in the middle of the scale, and the results were great. The blacks were nice, we could see enough detail, and there were no problems caused by car headlights. In other words we didn't get any of the "noise" or "streaking" I might expect with videotape. Film has almost reached the point of being able to capture anything the eye can see, and I believe the new negative stock is going to have a radical effect on lighting techniques for film. By the same token there are advances happening so fast in video technology that it is impossible to keep up with them. All in all I think this is a very exciting time for the industry. I prefer film and probably always will, but the one thing I learned shooting the episode of "Harper Valley P.T.A." is that a film cameraman with no video experience whatsoever has nothing to fear if he has an assignment to shoot on tape—especially if he is using a Panacam. We shot just like we would with film and got excellent results. In fact Art tells me the people at Compact Video kept asking him how we got such good looking images on tape. The answer is simple: good lighting and the fine optics and electronics of Panacam. ■

HOUSTON FILM FESTIVAL

Continued from Page 591

had to be set-up indoors in a subterranean patio at Greenway Plaza—not geographically the best place to stage such an event.

These minor roughnesses aside, the festival was a grand success in terms of audience attendance and reception of the films. Said Festival Founder and Director J. Hunter Todd after it closed, "Our initial audit indicates that, for the first time in 15 years, the festival ran in the black—not by much, but it did. Audiences increased about 30% over last year and entries were up, running at about 1,300 features, shorts, documentaries and commercials. In terms of feature films, we have shown some of the best and most unique work ever. In our fourth year in Houston—which is always a critical year for a festival—we have reached a degree of acceptance from the community and among filmmakers throughout the world to the point where we can attract some really great movies."

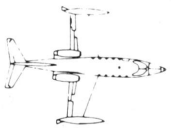
Program Director Rikki Kipple, who was responsible for assembling such a fine roster of films, had this to say at the close of the festival: "I feel that from every standpoint the festival was a tremendous success this year. It drew a record audience and we averaged two sell-out crowds a day. In tallying our preview cards, we discovered that we have been drawing almost equally from people who have attended the festival before and new people. I've had a great deal of help from a lot of really wise people who guided me in the right direction this year, including fine support from United Artists Classics, Triumph and Samuel Goldwyn Productions. With their continued assistance and support, I'm sure the festival will continue to grow and be as exciting as we always hoped it would be."

This festival is one of the few to which *AMERICAN CINEMATOGRAPHER* has given full coverage in the past—and that has been for two unique reasons. First of all, it is the only festival sponsored—and financed—by *filmmakers* (J. Hunter Todd heads *Cinema America,* a producing company in Houston), rather than by promoters. Secondly, by presenting awards in 85 separate categories, it is the only festival which so precisely sub-divided films into specific types—thereby avoiding the mixture of "oranges with apples", so to speak.

In its 15th year, the festival would appear to have found, at last, a permanent home in Houston—a booming, dynamic city that is a fitting location for a booming, dynamic film festival. ■

Continental Camera Rentals

Specialized Cinematography Systems



Astrovision **LEAR JET SYSTEMS** Pan 360° Tilt 46° in the slipstream. Pilot Clay Lacy. Also Lear Jet Stock Footage.

Helicopter **CAMERA MOUNTS** 16mm/35mm/75mm & Video, Helicopters, Pilots, Crews, Worldwide. Custom designed Jet Ranger III Camera Helicopter, Los Angeles area.

P.O.V. Helmet CAMERAS **CAMERAS 16/35** Lightest pin registered 35mm movie camera's in the world. Sky diving and stunt accessories.

Pitching Lens Advanced, Portable, Fast 3.9 Relay lens. For miniatures and Table-Top 7.5mm to 100mm. For all formats, Super 8 to 70mm.

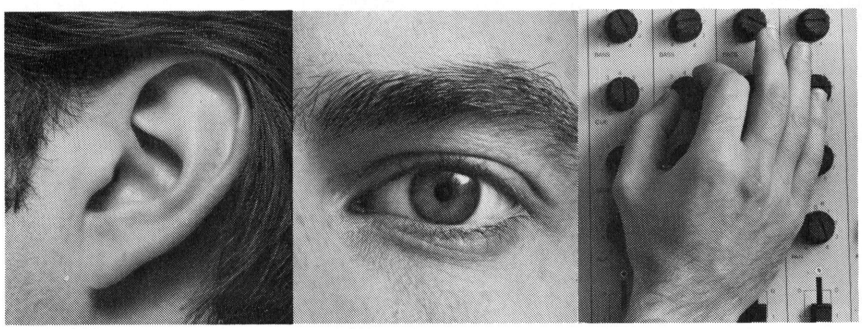
- Video assist for Arriflex & Mitchell cameras.
- Frame line generators for T.V. monitors
- Agents worldwide. Write for brochure.
- Body Mount Hand Held System.
- Seacam Underwater System.
- Helicopter Referral Service.

Continental Camera Rentals

7240 Valjean Ave., Van Nuys, Calif. 91406

one call does it all (213) 989-5222

With all our advanced technology, this is still some of our finest equipment.



At Servisound, if something doesn't look right, feel right, or sound right, our dedicated staff will work with you until it does.

Our services are just as professional as our people. Seven studios. Video sweetening. Original music scores. A huge stock music library.

We also offer complete film editing and 16 track mixing facilities.

Give your next project to Servisound. It's the soundest decision you can make.

servisound Inc.

(212) 921-0555-9

35 West 45th Street, New York, NY 10036

AMERICAN CINEMATOGRAPHER MANUAL

THE BOOK for all reasons

Detailing processes, techniques, equipment and fundamental facts of cinematography... Written by the top men in film.

NOW IN STOCK

THE AMERICAN CINEMATOGRAPHER MANUAL
P.O. BOX 2230 5TH EDITION
HOLLYWOOD, CALIFORNIA 90028

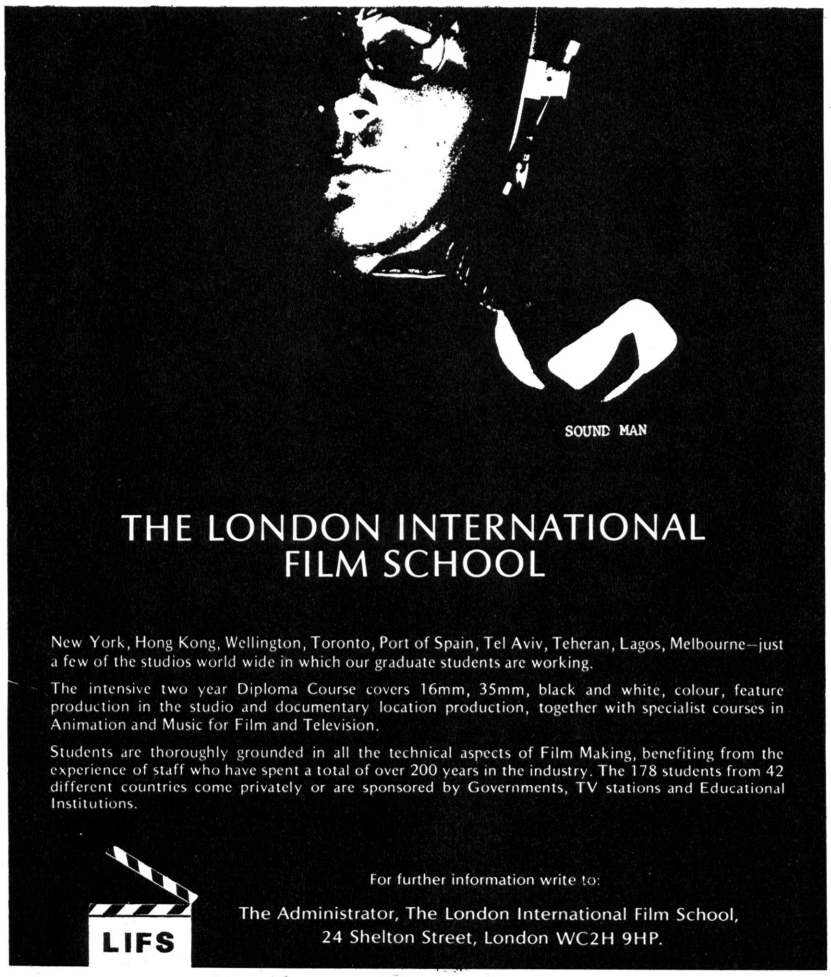
Please send _____ copies of the AMERICAN CINEMATOGRAPHER MANUAL @ $25.00 each, plus $1.00 handling fee (foreign offers, $2.00 handling). No C.O.D.'s.

NAME _____

STREET _____

CITY _____ STATE _____ Zip _____

California residents please remit 6% Sales Tax ($1.50 per Manual). Foreign Buyers please pay by International Money Order or U.S. Funds.


SOUND MAN
THE LONDON INTERNATIONAL FILM SCHOOL
New York, Hong Kong, Wellington, Toronto, Port of Spain, Tel Aviv, Teheran, Lagos, Melbourne—just a few of the studios world wide in which our graduate students are working.
The intensive two year Diploma Course covers 16mm, 35mm, black and white, colour, feature production in the studio and documentary location production, together with specialist courses in Animation and Music for Film and Television.
Students are thoroughly grounded in all the technical aspects of Film Making, benefiting from the experience of staff who have spent a total of over 200 years in the industry. The 178 students from 42 different countries come privately or are sponsored by Governments, TV stations and Educational Institutions.
LIFS
For further information write to:
The Administrator, The London International Film School,
24 Shelton Street, London WC2H 9HP.

CINEMA WORKSHOP

Continued from Page 532

the cameraman can move in any direction, even a complete 360°, as the automatic beam antenna always steers itself toward the base station.

As post-production costs rise and the demand for low-cost video in copious quantities continues to increase, the technique of multiple-camera/live switching may prove expedient and economical. The Ikegami ML-83 facilitates such technique even under the most adverse conditions and with a minimum of set-up time. As cinematographers and film producers learn the language of video, this is one technique with which they should be familiar. ■

"THE ERUPTION OF MOUNT ST. HELENS"

Continued from Page 584

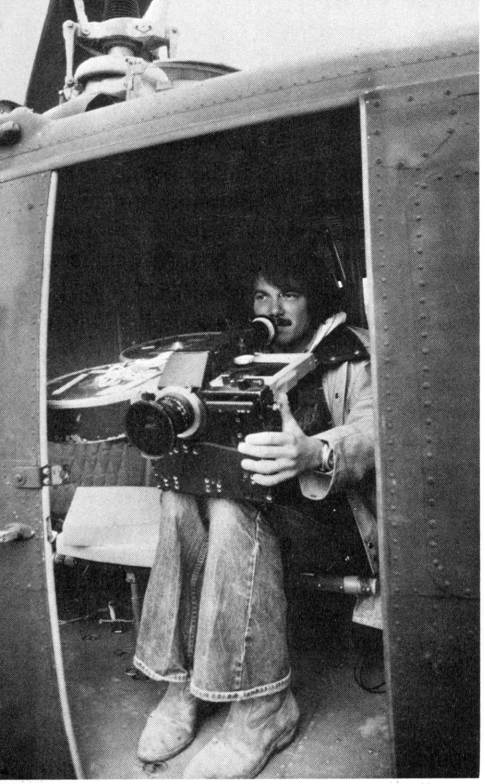
Helens has erupted again. This time the ash has begun to fall to the west. Rain forms ashy pellets which cake our windshield and headlights. We can continue only as long as our wiper fluid lasts. Cars have begun to succumb along Interstate 5. They are not out of gas or suffering from mechanical problems; they are simply out of wiper fluid, blinded by a pasty snowfall of wet ash. We grope our way to a service station, buy three, gallon-size containers, fill them with water and wiper detergent, and push on.

It is slow going all the way to Toledo where we learn that all search and rescue operations have been suspended because of the ashfall. We spend the day filming on Interstate 5, where conditions have turned tricky and sometimes treacherous. Tires churn the ash into obscuring clouds, at times reducing visibility to near-zero. Recurring rain turns the ash back to slurry. Authorities plead with motorists to stay off I-5, but accidents are frequent. The following day is the end of Memorial Day weekend, and we film monumental traffic jams of bumper-to-bumper vehicles along the ash-shrouded highway.

The search and rescue missions are on again. Back to Toledo. A camaraderie, born of shared frustration and experiences has developed among the newspeople there. We are known as "the guys with the big camera," and we endure giving endless explanations of Imax, Omnimax, Space Theaters, etc. In the age of miniaturization, a 70 pound camera requires explaining.

The weather continues bad. Satellite photography will reveal a persisting micro-weather system around the smoldering blast area—the mountain simply does not clear.

Our crew is down to two. Bober be-



Filming the volcano's devastation from space-available rides aboard military aircraft turns a lap into a camera mount for the world's largest film format.

comes deafened during a mission aboard a noisy Chinook, and has to return to Los Angeles for medical attention. Neihouse and I stick it out until the search and rescue operations close down. They have given up on the chances of the last of the missing.

We've shot the last of our negative. We could now get special clearance to fly and film within the devastation area, but no end seems in sight for the bad weather, and they need the camera back in Los Angeles. Time to call it a trip.

Passengers on the jet to Los Angeles endure two wretched specimens in ash-saturated clothing. One asks me if I am one of the last survivors. Yes.

Back in Los Angeles, I'm convinced from what we've seen and filmed that we are halfway toward a unique short film—

A DYNAMIC NEW LOOK IN
UNDERWATER CINEMATOGRAPHY

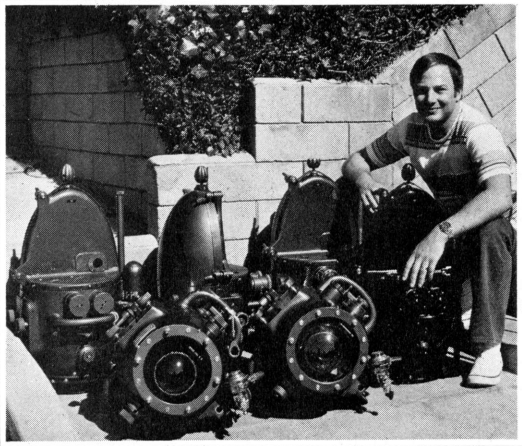
LOUIS PREZELIN
"8 YEARS AROUND THE WORLD WITH THE COUSTEAU TEAM"

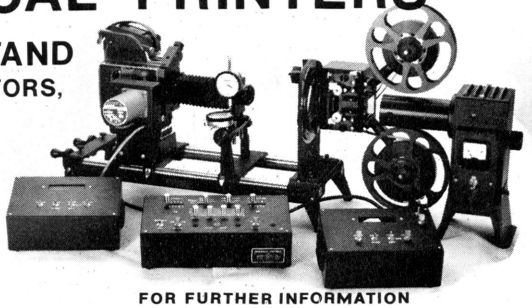
390 RAVENSCROFT GOLETA CA 93117
(805) 967-6349

TYLER® camera systems
VIBRATION ISOLATION HELICOPTER CAMERA MOUNTS FOR 16 / 35 / 70 mm AND TV PHOTOGRAPHY
Hollywood 213-989-4420—San Francisco 415-864-4644—Mexico City 905-559-4845—New York 516-294-0355
Miami 305-754-2611—Boston 617-266-7468—Denver 303-777-7699—Seattle 206-881-8273
Chicago 312-943-7300—Dallas 214-369-1165—Detroit 313-589-1900—Atlanta 404-622-1311
London 01-452-8090—Paris 328-5830—Sydney 888-2766—New Jersey 212-431-3930—Tel Aviv 03-280754
Send for brochure — Tyler Camera Systems, 14218 Aetna Street, Van Nuys, California 91401 U.S.A.
HELICOPTERS CAMERAMEN CAMERA PILOTS

Rycote Microphone Windshields
LATEST IMPROVEMENT
The windshield now slides on and off the suspension assembly without any fiddling with screws or lining up holes.
Now you can remove or replace the windshield in seconds.
For all sizes of capacitor microphones
SENNHEISER SCHOEPS A.K.G.
A good improvement – no alteration in price

beautifully made – to last
Rycote Microphone Windshields, New Mills, Slad Road, Stroud, Gloucestershire GL5 1RN, England. Tel. 04536 79338


UNDERWATER
35mm Spherical and Anamorphic
Totalvision-Cinemascope-Panavision
ALAN GORNICK, JR.
Director of Photography, IATSE 659
4200 Camino Real
Los Angeles, CA 90065
(213) 223-8914

OPTICAL PRINTERS
ANIMATION STAND
STOP MOTION MOTORS,
COMPOUND TABLE
REMOTE CONTROLS
QUARTZ LIGHT SOURCE,
WE STILL MAKE THEM FOR LESS

FOR FURTHER INFORMATION DIRECT YOUR INQUIRIES TO:
J-K CAMERA ENGINEERING, INC.
5101 SAN LEANDRO ST., OAKLAND, CA. 94601 · (415) 534-9018

camera exchange

Lloyd's is proud to announce
its appointment of
Richard D. "Pat" Singh—Vice-President

35mm CAMERAS

MITCHELL STANDARD, 75mm, 50mm, 35mm Baltar lenses, 38-150mm pan cinor zoom lens w/finder, 152mm Baltar lens, 110V AC/DC motor, view-finder, matte box, 2 ea 400′ mags, 2 ea 1000′ mags $5,500.00

MITCHELL BNCR, 20-120mm zoom lens, crystal motor, 4 ea 1000′ mags, Mitchell viewfinder, 15mm Kowa lens, 2 ea CP 30V batteries w/chargers, J-4 zoom control, cables, and cases $29,950.00

ARRIFLEX IIC HARD FRONT, 25-250mm zoom, J-4 zoom control, 3 ea 35mm x 400′ mags, CS/VS motors, 2 batteries, 2 power cables—USED $18,500.00

IICB, 28mm, 50mm, 75mm Schneider lenses, 3 ea 35mm x 400′ mags, CS motor, 2 batteries, 2 power cables, case—USED $12,000.00

16mm CAMERAS

ARRIFLEX 16 BL, 10-100mm Zeiss lens, governor controlled motor, 1 magazine, 2 power cables, matte box, case—NEW $18,000.00

ARRIFLEX 16 BL, 12-120mm zoom, 9.5-95mm zoom lens, governor controlled motor, crystalok, 2 power cables, matte box, 2 battery packs, 3 ea 400′ mags, cases—USED $17,000.00

CP16A, 10-150mm zoom lens, 3 ea 400′ mags, 2 batteries, 2 chargers, Halliburton case . $9,500.00

CP16A, Crystasound amplifier, 12-120mm Angenieux zoom, 2 ea 400′ mags, 2 batteries, 2 chargers $3,750.00

LENSES

25-250mm ANGENIEUX zoom lens, Arri standard mount $5,200.00
5.7mm ANGENIEUX lens, Arri "B" mount $895.00
300mm KILFITT ARRI standard $275.00
9.8mm TIGEA ARRI standard $975.00

TRIPOD—FLUID HEADS

O'CONNOR 100 MITCHELL base, w/case $1,500.00
O'CONNOR 50 PRO JR base $1,000.00
MITCHELL standard tripods $150.00
PRO JR tripods $110.00
ELEMAK STRAIGHT TRACK SECTION—NEW $2,500.00
ELEMAK CURVED TRACK SECTION $380.00
MC ALISTER DOLLY w/hydraulic riser . . $7,500.00

ANIMATION—STOP MOTION

ARRI 16S Stop motion motor, control and capping shutter, w/case $950.00
35mm MITCHELL stop motion motor w/control, cables, cases $1,800.00
ARRIFLEX Hi-speed motor and rheostat, cables $1,200.00
CP CRA6 Crystal motor $1,300.00
J-4 zoom motor and joy-stick control . . $1,200.00

ALL USED EQUIPMENT IS SUBJECT TO PRIOR SALE.

CONTACT: Pat Singh
Lloyd's Camera Exchange
1612 N. Cahuenga Blvd.
Hollywood, CA 90028
(213) 467-7956

Look for our full-page ad in the July issue of American Cinematographer.

the first of a new breed of theater newsreels to be shown on the immense, encompassing screens of the Omnimax Space Theaters. In its scale and devastation, the subject has turned out to be awesomely appropriate to the medium.

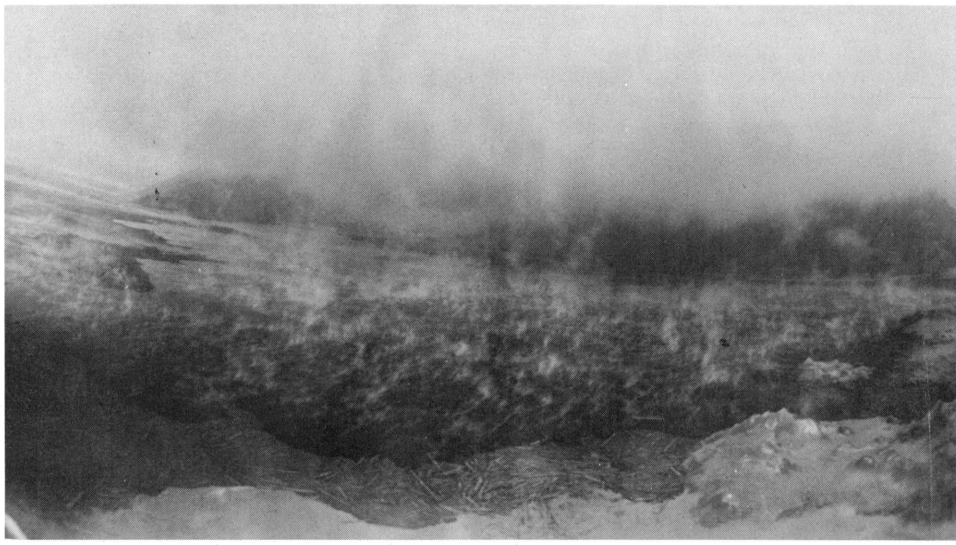
But we need two more breaks to finish filming. We need a break in the weather so we can finish filming the aerials of the devastation and the volcano; and we still need large format footage of the mountain in actual eruption.

To pursue the latter, we equip three cinematographers in the Portland area with motion picture cameras, and arrange aircraft for them in case of an eruption. Two of the cameras are only 35mm Eyemos converted to full aperture gates. The third is a favorite of ours, an 8-perf, 35mm Vistavision format camera adapted to mount Nikkor lenses. It yields a pin-registered negative large enough to blow up nicely to the full Imax format (2″ × 2.74″), and is the kind of camera I can afford to leave at a site waiting out a very unpredictable volcano, a luxury I can't afford with the expensive rental rates of the Imax camera. When (and if) St. Helens erupts again, I feel confident we'll get something. I have forgotten again that volcanoes require personal attention.

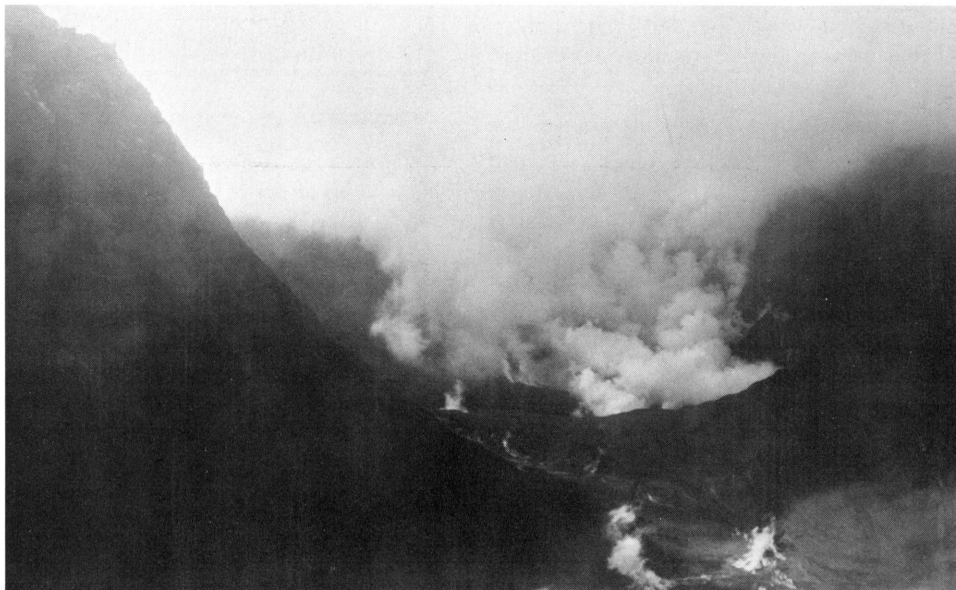
To film the remaining aerials of the devastation and the volcano is a matter of waiting out a break in the weather. When it comes (three weeks after the initial eruption), Neihouse and I are swiftly back with Imax camera and the special Imax camera belly mount designed by Barry Herron. We charter several days aboard Bell Jet Rangers, filming from both belly mount and doorway.

While still kicking myself for not having been there to film the first cataclysmic eruption, I try to locate larger format motion picture coverage by someone else. A

Continued on Page 620



The eruption transformed once-beautiful Spirit Lake into a steaming, log-filled mudhole. (BELOW) This view within the smoldering crater of Mt. St. Helens was captured in early June when weather cleared briefly. The mountain erupted again several days later. A wide-angle lens was used on aerials to minimize unsteadiness of hand-held IMAX camera.



Continued from Page 596

across a device I had never heard of before. A Nagra SMR microphone. This small device overrides the automatic level control on the SN with a gain control and provides metering and remote stop/start, all in the size of a cigarette packet. It is designed to have an AKG capsule plugged straight into it, but a lead was made up so that any microphone could be used. This formed the lightest non-automatic recording channel and it was possible to keep the SN itself warm inside clothing with the SMR strapped to the wrist.

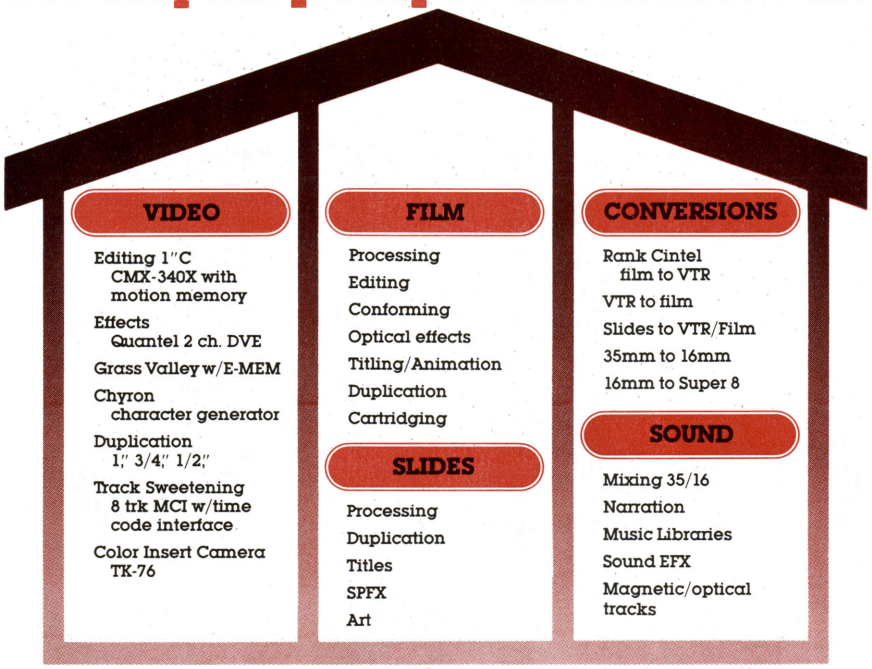
I decided to take one Sennheiser 816 and 2416, along with Sony ECN 50's and an AKG dynamic mike in case all else failed. Micron radio mikes were also included. In anticipation of high winds I took extra wind socks for the 816 and 416's and large foam windshields which fitted over the ECN 50's. Even though surrounded by foam the ECN 50's still had to be shielded inside climbers clothing. Wherever possible connecting leads were made out of neoprene cable and this proved to be very successful, being unaffected by the cold, whilst uncovered cables became very stiff and unmanageable and in the case of the ENC50's cracked, causing a breakdown in insulation.

On the whole the sound equipment worked very well in the adverse conditions. The radio mikes were unsuccessful but I think this was due to the batteries failing in the cold. The PP3-sized batteries seemed the least able to perform well at low temperatures. I had a battery belt made to supply power to the Nagra from batteries worn inside clothing and, as well as extending battery life, it also helped to distribute the weight.

I was especially impressed with the SQN mixer, both in its design and quality of construction. The reaction of the meter was unlike a Nagra and it took a while to become accustomed to it, but this is the only criticism I have of the device. Loading of SN's was simplified by preparing a number of preloads, a full SN spool and an empty SN spool with a tape already a few turns round the takeup. This helped considerably as threading an eighth-of-an-inch tape onto the take-up spool would have been very difficult with numb fingers.

I found that the cold, high latitude and generally unpleasant conditions generally mean that equipment which was complicated to set up tended to stay in its box. And in the conditions we experienced, it is definitely worthwhile to keep things as simple as possible. ■

For all your post production needs.



call the MPL Sales Department number **1-800-238-2636**

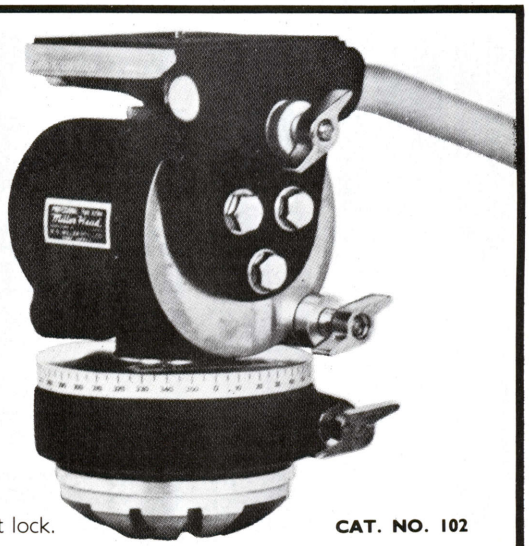
motion picture laboratories, inc.

781 South Main, Memphis, TN 38101 (901) 774-4944

MILLER

Still the most widely used fluid head in the world!

The Miller Professional-F Series Fluid Head for film and video cameras is a masterpiece of engineering and reliability, so rugged that we back our products with a full one year international warranty.



Miller Pro-F Fluid Head with cluster claw ball and positive tilt lock.

CAT. NO. 102

SPECIFICATIONS

Capacity: 20 lb (9.8 kg)
Weight: 5lb 4oz (2.37kg)
Size: 5½" high 5" wide 5" long (14x13x13cm)
Tilt: 100° forward 80° back
Tilt Drag: Fluid — continuously adjustable
Tilt Lock: Positive — independent of fluid system
Pan: 360°
Pan Drag: Fluid — continuously adjustable
Base: Pro Jr. (options available)
Handle: Vertically & horizontally adjustable
Camera Mounting Screw: ¼"-20 (⅜"-16 optional)
Temperature Range: −30°C to +50°C (−22°F to +122°F)
Material: Aluminium alloy castings
Finish: Black wrinkle baked enamel, anodized & / or plated
Accessories: Claw-ball levelling unit; Slip Pan unit

(PATENTED)

EXCLUSIVE CANADIAN DISTRIBUTOR SALES AND SERVICE

LEO'S CAMERA SUPPLY LTD.

1055 GRANVILLE ST., VANCOUVER, B.C. V6Z 1L4
604-685-5331

Write or call for prices and the dealer nearest you on the complete line of Miller Professional Products.

After you've shot it your way... shoot it our way.

Wherever you are, you're near Western Cine or Cine-Craft Laboratories

Hollywood, Orlando, Minneapolis-St. Paul, and Denver, from coast-to-coast and in-between, we're right where you need us most. We offer a full range of lab services: 35mm and 16mm processing and printing, film-to-video transfers, filmstrips, sound mixing, blow-ups, reductions, titling, opticals and more, much more.

We're the moving image labs.

Western CINE

312 S. Pearl Street
Denver, Colorado 80209
(303) 744-1017

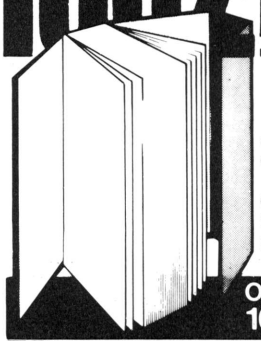
4915 W. 35th Street
Minneapolis, Minnesota 55416
(612) 922-1360

Cine-Craft LABORATORIES

45 N. Texas Avenue
Orlando, Florida 32805
(305) 298-0012

13062 Saticoy Street
N. Hollywood, California 91605
(213) 765-1418

1982 International Production Manual



FILM • TELEVISION • VIDEO

Containing the most up to date and comprehensive sections on film and video companies, technicians, rental companies and TV stations etc., ever compiled in the UK market - and all entries FREE!

Compiled from mail shots over the last twelve months from our own computerised data base. We've travelled the world extensively to gather information and orders - we've covered all corners of the globe to produce a guide you won't ever want to be without.

Carry an instant reference to such places as Red China and Timbuctoo.

ORDER YOUR COPY OF THIS VALUABLE 1st EDITION WITH 10,000 COPIES DISTRIBUTED WORLD WIDE

Post this coupon NOW to: B. L. Kay Publishing Company Ltd.
1 Pavilion Parade, Wood Lane, London W12 0HQ
Tel: 01-743 0822. Telex: 895631 C FOCUS-G

Name
Company/ Profession
Address
Telephone
Telex

Please send details to advertise in Spring '83 edition ☐ AC
Please send me ..... copy(s) @ £15 + £1.60 postage and packing (Europe + £2.19, U.S.A. + £5.00, Australia + £7.50)
I enclose a cheque payable to B. L. Kay Publishing Co. Mail Order Ac ☐ Invoice my Company ☐
Please charge my Credit Card ☐ Barclay Card/Visa ☐
American Express ☐ Access/Eurocard/MasterCard ☐ Card No.

AMERICAN EXPRESS · BARCLAYCARD VISA · Access

Signature .....
You may order by phone

Note: Your money remains yours until the goods are despatched to the address specified. If for any reason you are dissatisfied with your book you may return it to us within 14 days for full refund.
Reg. England No. 1555587

"THE ERUPTION OF MT. ST. HELENS" Continued from Page 618

sad fact emerges—no one filmed the event in any format larger than 16mm or videotape. For the film, we will be forced to recreate the May 18 eruption from stills taken by local photographers. I discover a remarkable selection of photographs taken by Dick Oman and Jonathan Combs. We make a friendly, battlefield deal. They will let me use their photographs in the film if I'll shoot additional coverage for them with out Nikons during our helicopter flights. By evening, they have six rolls of prime stills—some filmed within the crater of St. Helens—and we have rights to some extraordinary photographs of the May 18 blast.

Conditions in the devastated area are still extraordinary. Large steam fumaroles are venting from near the site of Harry Truman's Lodge on Spirit Lake. The lake, itself, is an immense, steaming, log-filled mud hole. Some areas seem lunar, at best. Others resemble only the cratered, smoldering, surreal landscapes of planetary surfaces by illustrators of science fiction.

The devastation viewed from the air is difficult to comprehend, even when later calculations of the force of the first eruption determine it had the energy equivalent of 27,000 Hiroshima-size atomic bombs detonated serially, nearly one a second for nine continuous hours. An atomic wasteland, indeed.

And the conditions change rapidly. Humidity and low temperatures one morning created hellish landforms in which plumes of steam rose eerily from a thousand

Ash-caked equipment car confronts author between filming flights. Despite careful taping, ash infiltrated the camera, jeopardizing the filming.

vents across the landscape. When we returned two hours later after refueling, the same scenes appeared barren-dry and dessicated.

The steaming crown of the volcano lifts momentarily and we fly into the crater, itself, filming the steaming bowels of the volcano and its emerging lava dome. Vietnam instincts twitch. I yearn for a flak jacket to sit upon. Though, if the volcano erupts beneath us (a mathematically vast unlikelihood, but still a puckering prospect), a flak jacket would be of small comfort. (As I write this, news comes of a helicopter with four scientists crashing within the crater because of turbulence. Fortunately, no one is seriously injured.) Three days after we fly inside the crater, the volcano erupts in a third major eruption.

We are by then gone (dammit), and a succession of disappointments besets our efforts to film St. Helens in eruption. One of our Portland cameramen managed to get aloft, but the Eyemo jammed at the beginning of the first roll. Not a usable foot of film.

In August, the mountain erupts again. But a combination of camera malfunctions (this time with the 8-perf, camera) and air turbulence yields the same results; no usable footage.

October 16. A midnight call from a friend in Portland. St. Helens has just erupted again, and seismic activity indicates the mountain is not through. It may erupt again the following day.

At dawn, I phone my three cameramen. Incredibly, two are out of town and the third has other commitments and can't respond if the mountain erupts. I can't stand it. I drive toward Los Angeles International Airport to grab the next jet to Portland. By car radio, I hear that, sure enough, the mountain has begun to erupt again. Three cameras are sitting in Portland and I'm three hours away.

The afternoon does little to dispel it. Shortly after 2 p.m., the mountain erupts again while we are circling it, and I film the eruption from its very beginning. Again, the eruption is short; one had to be right there to film it. Kind, mysterious fate. Dumb luck. But the last of the footage we need is in the can.

We complete the film. Paul Novros' music helps immensely. Bill Woodson is the right narrator. The finished 21 minute film, *The Eruption of Mount St. Helens,* has been gratifyingly successful. Space Theaters were quick and nearly unanimous in exhibiting the film. It set attendance records at several of them. It has earned its costs back, and more. and then, the frosting: the film receives an Academy Award nomination as the best documentary short of 1980. Herb Lightman calls and asks if there is a story behind the film which might interest *American Cinematographer.* I tell him I'll try something.

I've flown over the mountain since October. No more ash clouds. No fumaroles erupting from atop Harry Truman's resting place beside Spirit Lake. No hellishly steaming landscapes. The mountain is mantled in snow now and strangely placid. How I wish I'd seen her (and filmed her) that terrible day in May. Yet how lucky we were.

Occasionally, I see old eruption scenes of St. Helens on television. The tube demeans St. Helens; truly makes a molehill out of a mountain. That we captured some of her moods and power in the world's largest film format has been satisfying.

But not completely. Our cameras are still in Portland. Devotion dies hard. And I've got a strong feeling the film—and St. Helens—aren't really finished yet. ■

CORRECTION

In the January 1982 issue we ran an article titled "A New Micro-computer for Optical Houses." A caption on page 66 should have stated that Bill Taylor, Universal Studio's matte department Director of Photography said that he uses an independently developed program similar to Cinecomp's. We regret the error.

HOW "ANNIE" WAS FILMED

Continued from Page 558

After the New Jersey sequences were completed, filming shifted to California and the $1,000,000 tenement street which had been designed by art director Dale Hennesy and erected for the film at The Burbank Studios.

Construction of the four-story street, which is closed at both ends like a city block to allow 360-degree filming, took five months and employed more than 130 carpenters, plasterers, painters, laborers, and heavy equipment operators.

Some 250,000 board feet of 2x4s and 2x6s and other chunks of lumber were utilized, as well as 125,000 square feet of plywood wall surface, 400 cubic yards of concrete, 38,000 square feet of fiberglass and resin bricks, $14,000 worth of glass, and 58 telephone poles anchored in concrete to keep the whole thing from blowing over. It is a permanent set, the largest at the studio.

At the center of the street is the orphanage, which combined features of two buildings Hennesy had found on New York's Lower East Side. One actually had been a Children's Aid Society home built in the late 1800s.

The inside of the orphanage was actually an interior set constructed in one of the six huge sound stages used by ANNIE for filming.

The climactic action sequence of the film is a chase which ensues after Annie

BEHIND THE LENS OR IN FRONT,

TIFFEN FILTERS ARE THE INDUSTRY'S FIRST CHOICE.

Most major manufacturers of video cameras install Tiffen filters as original equipment in the filter wheel behind the lens.

Most major TV stations and studios use Tiffen filters in front of the lens.

Why? Because cameras are only as good as their components. When quality components are required Tiffen filters meet all the requirements.

They're rugged, reliable, precision-made. And the performance is always outstanding.

Superior technology and quality craftsmanship combine to make Tiffen filters the industry's first choice.

Tiffen Makes Filters For:

Ampex	*Harris*	*Rank Taylor Hobson*
Angenieux	*Ikegami*	*RCA*
Canon	*IVC*	*Schneider*
Fernseh	*Marconi*	*Thompson*
Fujinon	*Norelco*	*And Many Others*
GE	*Phillips*	

Write Department *AC* for New Professional Brochure and Price List.

TIFFEN®

90 Oser Avenue, Hauppauge, N.Y. 11787
(516) 273-2500 Telex 96-7748

Nine ways
PALMER FILM SERVICES
can work for you:

1 **Complete Range of 16mm Laboratory Services:** Color and black & white processing and printing, edgenumbering, magnetic striping, opticals, and special effects. Many Super 8 services too.

2 **Video Transfers:** We make high quality 16mm video to film transfers, using the Palmer Video/Film Camera—internationally known for excellent picture and sound recording characteristics.

3 **Mail Order Service:** Because Palmer Films is centrally located in San Francisco (½ hour from International Airport) we can serve customers everywhere promptly and efficiently. Write for free Price List including Laboratory, Editorial, Art, Video and Sound Services.

(TO BE CONTINUED)

to get the whole story, call:

W. A. PALMER FILMS, INC.
611 HOWARD STREET · SAN FRANCISCO, CA 94105 · PHONE (415) 986-5961
San Francisco's complete 16 mm film service

CAMRAPROMPTER

for rent at
CINEQUIPT, INC.

CINEQUIPT, INC. – *The only full line dealer for motion picture equipment and supplies in the upper mid-west.* **CAMRAPROMPTER,** *by CINEMA PRODUCTS, designed for those long dialogue passages, is compact and lightweight enough to be hand-held, and is controlled by a remote control unit. Give us a call to hear more about it. You'll be glad you did!*

CINEQUIPT, INC.
motion picture equipment
rental and sales
(612) 646-1780
2434 University Avenue, St. Paul, MN 55114

realizes that she is being abducted by a pair of imposters claiming to be her parents. She manages to tear loose, but is hotly pursued by her phony would-be "father" who chases her straight up in the air on an old railroad drawbridge.

Located by the Passaic River in East Newark, the bridge is nearly vertical, perhaps 85 degrees. Many of the ties, used like rungs on a giant ladder, were rotting. Fog and rain made the ascent more difficult and dangerous; when it didn't rain, a fireboat wet down the structure.

Not only did the stuntmen and Jim Arnett, the second unit director and stunt coordinator, have to climb, but also all the men and equipment needed for filming had to go up the same way. A cameraman who would attempt it, Ray de la Motte, was brought out from California; working on a five-foot beam at the end of the span, the others had to hang over the edge, out of his way, when the camera rolled. A camera plane, a Bell Jet Ranger, captured the action from the air.

While the rescue is the climax of the show, the finale is a spectacular July 4th party. Warbucks' friends are there, President and Mrs. Roosevelt, Annie's orphan comrades. The mansion and grounds are illuminated by 10,000 light bulbs; a circus has been hired for the occasion complete with tightrope walkers, firebreathers, clowns, a roller-skating elephant.

ANNIE was two years in preparation, began filming April 29, 1981, and concluded principal photography September 4. It cost more than $35 million.

An estimated 1,913 people worked on the movie, among them 117 dancers, 82 actors, some 1,000 extras, 225 crew members, 190 construction workers, 59 police and security guards, 65 musicians, and 175 people from Radio City Music Hall: stagehands, Rockettes, musicians, and all.

Frequently there were more people watching than working. A crowd conservatively numbered at 1,000 watched evening filming in New York's Greenwich Village area; hundreds more gathered at the Metropolitan Museum of Art, Public Library, and Plaza Hotel. There were even 500 watching the finale in New Jersey. ■

BEHIND THE CAMERAS FOR FILMING "ANNIE"
Continued from Page 568

pals and other dancers moving over large portions of the set and you've got to be prepared to make 180-degree moves with the camera. Technically it was a matter of doing a lot of pre-lighting, then designing shots that kept the film from being too "cutty", particularly in the musical areas, of which there are many in this film. It

would take longer to get a scene ready to shoot. But then, when you began shooting, you could cover great areas of the script all in one shot. I suppose that is the greatest single challenge. Otherwise, in terms of the light level and all of that, it's pretty much the same as shooting any other kind of film. I, on purpose, did not go for heavily dramatic lighting because I think it's incumbent on the filmmakers of a musical not to make the camera self-conscious or the lighting self-conscious, as this seems to take away from the songs or the jokes. The lighting was kept soft in that there was no light used in the filming that did not have diffusion in front of it.

QUESTION: In filming the musical numbers, of course, you are confronted with choreography that can sometimes be pretty rapid and swing into various planes very rapidly. Would this mean that you would go for a higher light level in order to maintain greater depth of field just to cover yourself on the follow-focus?

MOORE: Yes, I would say that. Everything inside, of course, I forced one stop. This was prior to the availability of the new Kodak emulsion, 5293, so everything was forced a stop and I was working at 100 footcandles, at least. You say, "Let's start with 100." But by the time you've got all the fill and the backlights and this and that working, you are up to 150. Certainly no one objected to that, because it never got that hot on the set – and the more depth of field the better.

QUESTION: What about the types of light? Was it Brutes or mainly HMI or what?

MOORE: I inherited a package of lighting by virtue of coming on the show late. I had a combination of HMIs and Inkys – some foreign-made Inkys – and I cleaned all of that out and used for my interiors strictly conventional Mole-Richardson high-intensity quartz lights. We lit the main gallery of the mansion with a large bank of 100-watt quartz lights that were put into what amounted to sort of chicken coops that were hanging down. They were balanced for interior. I used HMIs and arcs strictly on the outside – HMIs for daylight fill when we had a rather small company and didn't need to lug the arcs around, but on the other hand, there were many night exteriors where we had to cover the entire front of the mansion or the bridge over the Passaic River, which was a very big scene, and then we would use as many as 10 or 12 arcs. I like PMI lights, but when you really want to move around

Mole-Richardson®

BARBIZON
SOLE DISTRIBUTOR
of the complete line of

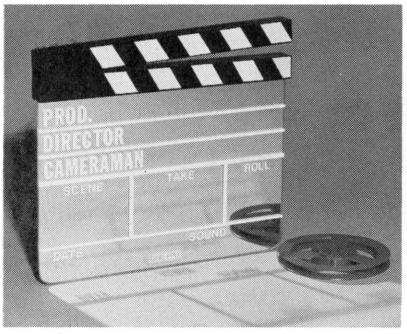
Mole-Richardson

lighting products in
NEW YORK - NEW JERSEY
& NEW ENGLAND

BARBIZON

BARBIZON NEW ENGLAND
(617) 935-3920
Full Service Complete Stocks
NYC Tie-Line (212) 772-0570
Overnight Deliveries
3 Draper St., Woburn, Mass. 01801

BARBIZON NEW YORK
(212) JU6-1620
Nationwide Service For 32 Years
Same Day Shipment
Rush Delivery In Manhattan
426 W. 55 St., N.Y.C. 10019



SPECIAL LOW PRICE
– LIMITED TIME ONLY!

MIRROR SLATE

THE PERFECT GIFT AND DECORATOR PIECE

For everyone in the motion picture industry, the beautifully finished Mirror Slate is a gift that will be proudly displayed in home or office . . . the universal symbol of our craft. Working clap-board, heavy plate mirror glass, permanent white lettering. A full-size duplicate of the slates used in the filming of every production scene. At the end of your production . . . for any and every gift occasion . . . it's the one gift you can be sure is exactly right. And what could be more appropriate for your own office or home . . . ? Available at this special low price for a limited time only, so order yours now for early delivery! **only $28.95**

CINE-PRO ▪ 940 N. Orange Drive ▪ Hollywood, Calif. 90038

Please send immediately_____individually boxed Mirror Slate(s) @ $28.95 each, plus, $2.50 each postage and handling.

Name _____

Address _____

City _____ **State**_____ **Zip**_____

Charge to my credit card number _____ ☐ **VISA** ☐ **MASTER CHARGE**

OR: Enclosed is my ☐ **Check** ☐ **Money Order**

Signature _____

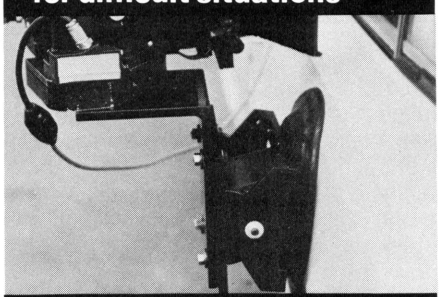
SALES·RENTALS
SERVICE

THE EDGE™
Computer-Assisted Editing System

- Compact Design/Fingertip Controls
- SMART KEYS™ • Auto Assembly
- VTR Mix • Machine Control
- Time Code/Pulse Count Editing
- Built-in Dissolver • Six Preview Functions
- Edit Decision List Input/Output 340X.
- Competitively Priced

CALL (212)889-3300
LAUMIC CO. INC.
306 EAST 39th ST., NEW YORK, N.Y. 10016

super grip
. . . the ideal camera mount for difficult situations



Super Grip's single, powerful "gripper" makes it a quick, strong and efficient means of mounting cameras and lights in an unlimited number of difficult situations. It will mount on curved, irregular or flat surfaces in a horizontal, vertical or in-between position and it may be tilted through a 360° circle by turning the gripping pad on the surface.

PRICE: $495.00
(Includes Super Grip complete with carrying case, angle camera bracket, mounting bolts, wrench and instructions)

alan gordon enterprises inc.
1430 N. Cahuenga Blvd., Hollywood, CA 90028
Telephone: (213) 466-3561 • (213) 985-5500
TWX: 910-321-4526 • Cable: GORDENT

and cover a big area and keep the multiplicity of shadows to an absolute minimum, nothing can beat an arc.

QUESTION: You did mention earlier that there was no light that did not have diffusion on it. Can you expatiate on that?

MOORE: I wanted to deliver a film that had a "pretty" look. Pretty is not the best word, but I wanted it to be pleasant to look at—not harsh or hard-edged or anything of the sort. Certainly in the portions of the film where Annie is in Daddy Warbuck's mansion, this is bigger than life, like a fairy tale. Even in the orphanage, and on the street outside the orphanage, I wanted to make it look funky, but still lovable. This implied to me the use of soft lights in all cases. I did, on interiors where the set was such a size that I could do it, use a lot of bounce light. Then, as the sets got a little bigger and we had to start projecting light, as opposed to bouncing it, we used a great deal of either tracing paper or shower curtain, and as we got farther and farther back and still needed density, but at a greater distance, we used maybe a light spun glass. Literally, even for backlights and kicker lights, I would insist on a spun, at least, if not something heavier or more diffuse. Of course, at night, we had to use Titan arcs, but those were for the big, big, sweeping scenes where there was no choice and where sharp shadows were indicated. But in all other interiors, and certainly on the huge street set that was built on the back lot of Burbank Studios. I had the studio build a very large silk, that could be drawn across the street within 10 minutes on cables that were invisible to the cameras. The silk could be brought across or withdrawn at my option in order to insure that down there we were getting a soft look to the film instead of a harsh, shadowy, sweaty look. The arc fills that were used on the street under that silk would have diffusion on them, but spun, as well.

QUESTION: What about filtration on the cameras?

MOORE: I like to use a #2 low contrast filter almost always. There are times when even a #2 is subject to picking up a kick light that might give you a little bit of flare or if you are looking at a particularly hot sky with #2 low contrast, even that light a filter will have a tendency to make everything look milky. For the most part, that's what I went with throughout. I knew that the 70mm release print to be made from our anamorphic 35mm negative shouldn't be too cluttered up with effects. At least that was my feeling. I had to take into account the producer's feelings in this matter. Ray Stark is a guy who likes to see nice bright sharp pictures and I think it's incumbent on a cinematographer to take that into account, so we tried for as much of a sharp look as we could and still get a little bit of a soft edge to the shadows. The low contrast filter does a pretty good job with that. I didn't use any nets at all, and no "sparkle plentys" or any other types of diffusion, just a #2 low contrast filter.

QUESTION: In other words, you wanted a soft effect, but rather than doing it with diffusion over the lens you did it with diffusion on the lights mainly?

MOORE: Yes, I would say that is the best way to put it. No matter what kind of a diffusion filter you put on a lens, if you've hard lit the subject, it's still going to look pretty hard lit. You have to start with the light and then decide how much to come up onto the lens itself for the diffusion and that's what I came up with.

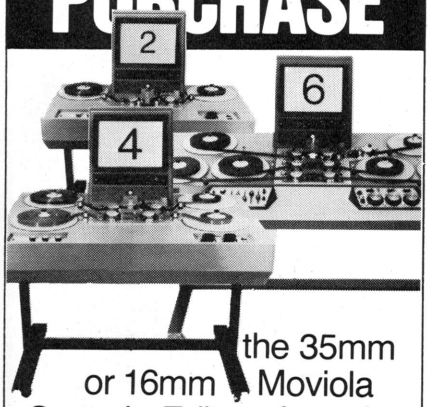
COMMENT: At least you didn't have to shoot through burlap to make anybody look good.

MOORE: There was no one who gave me any problems. Carol Burnett wanted to look real tough as Miss Hannigan. Anne Reinking, who is by nature a beautiful woman, didn't require any special attention in that respect.

QUESTION: What about colored light? Did you use any?

MOORE: Yes, I always have liked to use a little bit of warmth in my lining light and backlight. A half MT2 certainly works quite well for me in terms of night interiors and night exteriors too, for that matter, because you expect to see practical lamps whose color temperature is certainly on the warm side in real life. Even on exteriors, the same sort of thing often holds true if you have a source of an incandescent nature. I am a "source-lighter". I want to know where my light is coming from, and if there is no practical there to motivate a light, we'll very often put one in. Obviously there are exceptions, but there were other occasions in terms of what sort of colored gels to use where they were indicated by another source. Up on the top of the bridge on which little Annie gets trapped there is a navigation light which is red. Clearly, we used a heavy red filter up there. Then, when we went to shoot the mansion itself at the end of the film, there was a big Fourth of July party and the en-

RENT-LEASE PURCHASE



the 35mm or 16mm Moviola Console Editors from the only one in New York

- Service contracts available on all moviola equipment.
- Complete line of editing, projection and sound equipment for rental or purchase with full shop facility for overhauls and service.
- Complete stock of editing supplies.

CALL (212) 889-3300

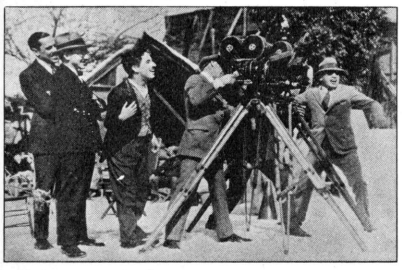
LAUMIC CO. INC.

306 EAST 39th ST., NEW YORK, N.Y. 10016

SALES • SERVICE • RENTALS

LASZLO KOVACS, A.S.C.,
VILMOS ZSIGMOND, A.S.C.,
or OWEN ROIZMAN, A.S.C.
teaches

Cinematography & Lighting Workshop



"The Gold Rush", filmed in Truckee, 1924

SEPTEMBER 12-18, 1982

Spend one week in intense study of filmmaking with one of today's great cinematographers. Studio and location work in the restored gold rush town of Nevada City, CA.

for complete details please write or call

T A H O E

PHOTOGRAPHIC WORKSHOPS
P.O. Box 3060A
Truckee, CA 95734
(916) 587-4500

tire mansion, including the facades and balconies was outlined in 25-watt bulbs, all of which were on dimmers. I think there were something like 10,000 bulbs. It was staggering. I supplemented the lighting there with some lights that had a chocolate-colored filter on them to light the stone facade of the building. This gave it a nice warm glow. I didn't do anything really garish because the piece didn't call for it.

QUESTION: What about camera movement. To what degree did you use it?

MOORE: I think that by the very nature of a musical, long flowing movement is called for. We used the Fischer Dolly quite a lot except when we would be on the Nike Crane, or in the East, on a crane that was similar to an Apollo. We used (but not as much as I thought we would) the Steadicam. We had Garrett Brown come back on several occasions to shoot for us but we discovered that the disciplined nature of the dance numbers was such that we had better control in many cases just with the camera on the dolly. The musical nature of the film, in addition to the fact that, in any case, Huston loves to design long flowing master shots and not cover. One could perhaps say he does this in order to control the editing more, and one couldn't altogether blame him for that.

QUESTION: Would you tell me a bit about your method of working with John Huston?

MOORE: Well, our procedure would be to rehearse a scene or a sequence and, once we knew what the actors were going to do, discuss what would be the best way to photograph it. We would start with a move that went from here to there and I'd say, "Well, John, you know, if we just zoomed in a little bit here we could go into an over-shoulder, and then they could get up and move . . ." Then he'd say, "Oh yes, let's do that." Then he'd have an idea and before you knew it, we would have two or three pages of script all in one shot. It takes longer to design and execute such shots, but they please John Huston and I like them a lot too. We did a good deal of that and I think it shows in the flow of the movie.

QUESTION: Did you use a big crane?

MOORE: When we came back to California, having been in New Jersey at the mansion and on the streets of Manhattan for something like seven weeks, we were shooting a lot on the New York set at the

Get'm Fast...Get'm Right...

Dailies Over-night..

priced right!

FILM AND . . VIDEO TAPE

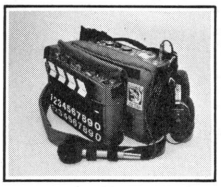
FILM: 16mm & 35mm
negative TAPE: 16mm & 35mm video tape transfers. Come in or call us!

FOTO-KEM
MOTION PICTURE LABORATORY

FOTO-TRONICS

VIDEO TAPE TRANSFERS and DUPLICATION
2800 W. Olive Ave.
Burbank, Calif. 91505
213/846-3101/846-9350

WE MAKE YOU MOBILE



with

KANGAROO™ Nagra Pack

Get more from your Nagra recorder with a Kangaroo™ Nagra Pack. Designed and built with the same care as our Kangaroo™ Video Pack for videocassette recorders, the Nagra Pack provides the ultimate in a convenient, lightweight way to carry a Nagra tape recorder.

- Detachable pockets hold tapes, batteries, cables, clapboard, two wireless microphone receivers.
- Comes complete with heavy-duty, padded shoulder strap, hand strap, cable organizers, and more.
- Made with care from the finest foam, cloth and metal materials for quality and long life.

WE SET THE STANDARD

In addition to the Nagra Pack, our line of quality products for users of video equipment now includes:

Kangaroo™ Semi-tough Camera Case, an aluminum-reinforced padded case for carying video cameras;

Kangaroo™ Video Pack, providing a lightweight, convenient way to carry a videocassette recorder and extra tapes, microphones, batteries and two wireless microphone receivers;

Gripper™ Strap, a padded, heavy-duty shoulder strap that won't slide off nylon jackets or other slippery material.

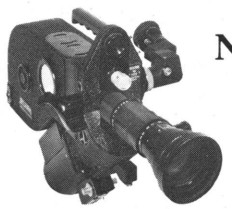
Kangaroo™ Video Products, Inc.
9190 Manor Dr., La Mesa, CA 92041
(714) 698-0230

Teknifilm
Oregon's largest film lab
Teknicians trans
transfers 16mm film or
fer film to tape,
35mm slides.
Teknically dup
Quantity duplicates
licate video cass
of highest quality.
ettes with top-
Finest video
Teknology equip
processing equipment.
ment.

909 N.W. 19th Ave. • Portland, OR 97209
503/224-3835

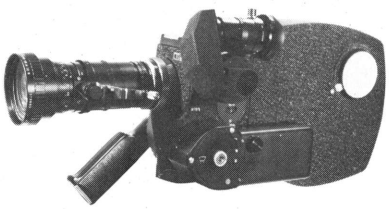
Teknifilm INC.
TeknifilmVideo

eclair
SALES, SERVICE
& REPAIRS



NPR

ACL



ecam
Company
1430 N. Cahuenga Blvd.
Hollywood, CA 90028
Telephone: (213) 466-7301

studio. We did use a Titan or Apollo Crane on many occasions there. Then, when we were shooting in the orphanage interiors, those interiors had to be built up off the stage by something like eight feet in order to show stairways going down into a vestibule of sorts, so there it became impossible to use anything bigger than a Nike. It's quite a little job to get it in and out of the stage, so for the most part we were on a Fischer inside on our sets. When we duplicated the top 30 feet of this railroad bridge which I mentioned that we shot in New Jersey, that was put on a stage at the studio and for that purpose we had to use a Nike and all the extension available in order to get the camera in among the girders of the railroad bridge and see little Annie climbing up the ties. The background, of course, was a huge black eye with little pinpoint lights to simulate a city skyline.

QUESTION: On that score, can we talk about your having to match to what the second unit had filmed?

MOORE: The sequence that involved Annie being chased by the bad guys onto a railroad bridge occurs when the bridge is in its upright position. As it always happens, people who are being chased always seem to want to climb up a tree or a building. Well, in this case, it's a huge, huge, railroad bridge. That had to be covered, clearly, by photo doubles, and when photo doubles are used you bring in a second unit. This was done very, very well by Rex Smith and his team. They had a helicopter and a number of arc lights and by mutual agreement beforehand did the master shots, the shots of the photo doubles actually climbing up the bridge. They covered it with the helicopter at the very tip of the bridge and then it was necessary for us to come back with the principals and do all the action around the base of the bridge itself, and matching that lighting was not difficult. We had scouted the bridge together and it was determined where the sources would be and, therefore, where the arcs would be placed and the 10Ks hidden up in among the girders and that sort of thing. Having done that, when the first team arrived to do the photography at the base of the bridge, it essentially had already been lit, or at least outlined, so we just came in and did what the second team had done with the photo doubles. It was a case of very careful pre-planning.

QUESTION: How about the problems of composing for the anamorphic format and, in the case of a musical, does it help you more than hinder you?

American Cinematographer

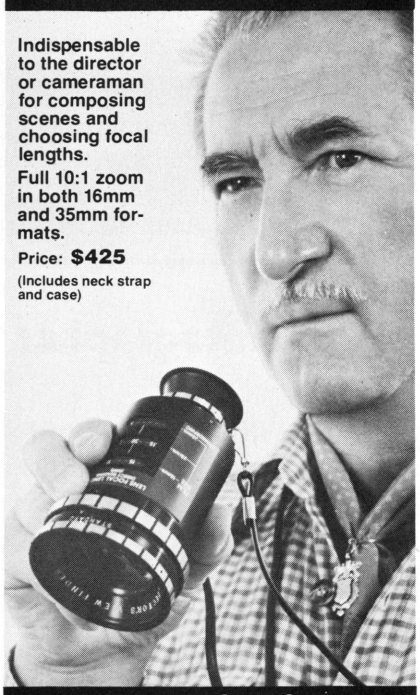
Back issues for sale:

Feb	1974	Filming of the Royal Wedding
Apr	1974	Special 3-D Issue
June	1974	Filmex 1974
Oct	1974	Film at Expo 74
Dec	1974	Photokina
June	1975	"Day of the Locust"
July	1975	College Awards & "The Invisible Man"
Sept	1975	Film 75
Dec	1975	"The Blue Bird"
Apr	1976	Filming the Winter Olympics
Aug	1976	"Dawn Flight"
Nov	1976	Montreal Olympics & "Islands In the Stream"
Feb	1977	"Voyage of the Hokulea" & "Rocky"
Apr	1977	ABC Winter Sports, "Network" & "A Bridge Too Far"
May	1977	Academy Awards
June	1977	"Rollercoaster"
Sept	1977	Film 77
Nov	1977	"Valentino" & "Damnation Alley"
May	1978	Academy Awards
June	1978	"Big Wednesday"
Aug	1978	"Grease"
Sept	1978	"Treasures of Tutankhamun"
Nov	1978	"The Wiz"
May	1979	Academy Awards
June	1979	60th Anniversary, "Days of Heaven" & "Dracula"
Aug	1979	"Alien"
Sept	1979	Film 79
Oct	1979	"The Electric Horseman"
Nov	1979	"The Runner Stumbles"
Dec	1979	"1941"
Feb	1980	"Star Trek"
Apr	1980	Altman's Sound Recording Techniques
June	1980	"The Empire Strikes Back"
Aug	1980	"The Shining"
Sept	1980	"Shogun"
Oct	1980	"Cosmos"
Nov	1980	"Heaven's Gate"
Jan	1981	"Higher We Fly"
Feb	1981	"East of Eden"
Mar	1981	"Altered States"
Apr	1981	"Cannery Row"
May	1981	Academy Awards
June	1981	"Clash of the Titans"
July	1981	"The Lone Ranger"
Aug	1981	"For Your Eyes Only"
Sept	1981	BKSTS
Oct	1981	"Over the Falls"
Nov	1981	"Raiders of the Lost Ark"
Dec	1981	Motion Control

CIRCLE ISSUES DESIRED.
SEND $5 PER COPY TO:
American Cinematographer
P.O. Box 2230
Hollywood, CA 90028

MARK IV 10:1 ZOOM DIRECTOR'S VIEWFINDER

Full 10 to 1 zoom range in 16mm and 35mm formats



Indispensable to the director or cameraman for composing scenes and choosing focal lengths.

Full 10:1 zoom in both 16mm and 35mm formats.

Price: **$425**

(Includes neck strap and case)

alan gordon enterprises inc.

1430 N. Cahuenga Blvd., Hollywood, CA 90028
Telephone: (213) 466-3561 • (213) 985-5500
TWX: 910-321-4526 • Cable: GORDENT

DELIVERIES NOW BEING MADE IN LIMITED NUMBERS

The 16mm

EMP

World's smallest and lightest professional cine camera.

Weight: 1 kg. Crystal sync 24 or 25 f.p.s.

Exceptionally stable film plane and image positioning, ideal for *blowup to 35 mm.*

By the makers of the R-2 Reflex Autocollimator.

RICHTER CINE EQUIPMENT, INC.
ESSEX, NEW YORK 12936 U.S.A.
(518) 963-7080

MOORE: It definitely helps in the case of a musical. It makes it a bigger show. It makes it like a stage proscenium. There's no doubt in my mind that, putting every other consideration aside, a musical should be photographed in this super-wide format. It was a big help; it was not a hindrance at all. ■

QUESTION: What is the psychology you have to adjust to in working with features as opposed to commercials?

MOORE: Commercials are so terribly, terribly structured. I mean, you're dealing in half-seconds of time on screen, and things that have to be done exactly on cue. It's quite tedious. When you're out on the road shooting a good-looking car it can be fun, but if you're doing table-top photography of detergent commercials it becomes very tedious. With feature films, of course, there isn't the same sort of discipline in terms of timing, and it gives you a much greater scope, more opportunity to move the camera in a meaningful manner, or to go for a different type of lighting than you would in order to sell a product. So there's a big, big difference there.

QUESTION: Is there any social comment in ANNIE?

MOORE: Yes . . . that whether you're rich or poor it's nice to have money. Seriously, it certainly has a universal story . . . a dream, and I think it'll appeal to people throughout the world. The entire cast is absolutely perfect and the kid that plays Annie, Aileen Quinn, is just the most marvelous little actress I've ever seen. I think the film is going to have tremendous appeal for audiences of all sorts.

QUESTION: Did working with children present any problems that you hadn't anticipated?

MOORE: None whatsoever. I suppose there have been kids that are a pain in the neck, but these kids were simply delightful.

QUESTION: It's interesting that Huston, at this point in his life, would not only be making a musical for the first time, but one about a 10-year-old child.

MOORE: Yes, but you know, he's done so many marvelous things. He lets his actors pretty much sort things out for themselves to begin with. And he'll watch, and we'll shoot a few times. And then an idea will hit him and he'll very quietly ask the actor to try something else. Frequently, it shifts the gears of the whole scene and

Computer-Assisted Film Editor/Controller

The CMX/ORROX Film Editor/Controller offers an Editor the possibility of being able to rapidly build up a video tape visual and audio representation of his decisions without cutting any film. The system is simple to learn, fast to use and as each version of a sequence is edited an automatic edge number is generated for later matching. *Laumic Co. is the exclusive East Coast Distributor for the CMX/ORROX Film Editor/Controller*

CALL (212) 889-3300

LAUMIC CO. INC.

306 EAST 39th ST., NEW YORK, N.Y. 10016
SALES • SERVICE • RENTALS

MOTION PICTURE CAMERA

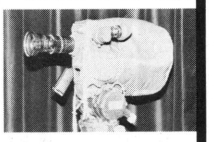
BARNEYS

The Best in Cold Weather Protection and Reduces Operating Noise

AVAILABLE for the following models:

- ACL
- NPR
- SR-16
- AATON
- BL-16/35
- Other models custom fit

ACL 200″ or 400″ mag.



OUR BARNEY IS:

- Heat Insulating
- Weather Resistant
- Lightweight
- Easy for mag. changes

Replacement belt for Battery Pack 7/8/9 Pockets, 12/32 volts

OPTIONS:

- Sound insulation pads
- Individual adjustments

WE ALSO MANUFACTURE:

- Barneys for video equipment
- Shoulder harnesses and cases for Nagra recording equipment; other makes custom fit

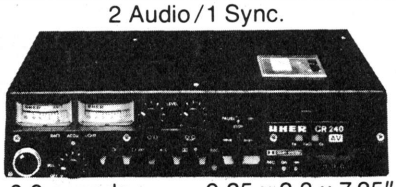
FOR MORE INFORMATION or to order write or phone to:

L. MARKEL

4655 Vezina, Montreal, Que.
Canada H3W-1B7
Tel. (514) 735-0582 Res. (514) 733-0270

Dealer Inquiries invited

2 Audio/1 Sync.



6.6 pounds 9.25 x 2.3 x 7.25"
Conversions by THE FILM GROUP
Lines Available:

SENNHEISER	ELMO
AKG	A-T MICS
SONY	MILLER
UHER	NIZO
JVC	SANKYO
LOWEL-LIGHT	SPECTRA
BOLEX	GOKO
BEAULIEU	ORYTEC

JAC CARPENTER (CINE)
P.O. BOX 1321
MEADVILLE, PA 16335—0821

eclair Service?
Still unchanged and available at the same location.
PROCAM INCORPORATED
905 North Cole Avenue
Hollywood, California 90038
(213) 464-2125
Same Original Technicians and Large Parts Inventory

STOCK FOOTAGE

OVER
300,000
SCENES!

After forty years as a producer and distributor of educational films, Coronet Films & Video has a collection of stock footage scenes—all rights available—that numbers over 300,000. You'll find an abundant variety of subject matter with a selection filmed around the world featuring exceptional wildlife scenes and geographic locations.

For further information on this tremendous library of footage telephone Tom Geary toll-free at 800/621-2131. In Illinois, call collect, 312/977-4000.

CORONET®
Films & Video
65 East South Water Street
Chicago, Illinois 60601

turns out to be much better. Well, now, that comes from this man's years of being an observer of the human condition and directing it in motion pictures, and that's where his experience comes in. So it doesn't matter whether it's a 10-year-old actress or an 80-year-old actor, he can draw on this experience to help them along in their performance.

QUESTION: How about Ray Stark? Was he ever involved with you in your area?

MOORE: Oh, yeah, very heavily. As you know, Ray is personally producing the film. He has a terribly emotional (not to mention financial) involvement in the film and it showed itself by his being on the set quite often and expressing his concerns, sometimes with more decibels than others. And people have been replaced, people have been praised and criticized. I mean, he's in there. He is a producer who really does care, and I admire him for his tenacity. He reminds me of a bulldog. He sinks his teeth into your back-side and insists on the best, and if he's not getting it he's going to go for it again, and again, until he gets what he thinks is correct for the project.

QUESTION: Have you found any of the pictures that you've done more interesting, more rewarding than the others?

MOORE: I think I've made my feelings clear about working with Huston already. But I also enjoyed doing THE REIVERS a lot, because I was working with Mark Rydell, a director who is not only an excellent actor and director, but also has a very good eye for camerawork and lighting. And it was marvelous shooting SOMETIMES A GREAT NOTION, which Paul Newman ended up directing. That was a very pleasant experience, because not only is Paul an excellent director, but he's great fun to be with. I would say that I've gotten the most pleasure from my work in terms of my relationships with people on the show. It would also be fun to shoot one film that really went through the roof.

QUESTION: ANNIE could be the one.

MOORE: I hope you're right. It's odd the way that works. I see film after film, year after year, that are really very nicely photographed, and because the film itself doesn't take off at the box office, the photography doesn't get recognized. As a matter of fact, I think you have to search out a film today that's badly photographed. You may not agree with that, but

WESTHEIMER Company
titles inserts opticals
Joseph Westheimer, A.S.C.
TITLES, TRAILERS, INSERTS AND OPTICAL EFFECTS
FOR MOTION PICTURES AND TELEVISION
466-8271
736 Seward St., Hollywood, Calif. 90038

American Cinematographer

ISSUES WHICH GROW RARER with each passing year . . .

We have limited numbers of

"Star Trek," February 1980
"Empire Strikes Back," June 1980
"Alien," August, 1979
"Shining," August, 1980
"Shogun," September, 1980
3-D Special, April, 1974
"Clash of the Titans," June 1981
"Lone Ranger," July 1981
"Raiders of the Lost Ark," November 1981

Other issues back through the years are also available.

Send $5 per issue to:
AMERICAN CINEMATOGRAPHER
P.O. Box 2230, Hollywood, CA 90028

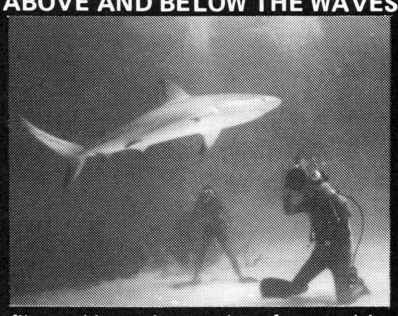
ACTION WATER PHOTOGRAPHY
Surfing
Windsurfing
Ocean Waves
1981 Emmy Award for AMERICAN SPORTSMAN
CONAN BIG WEDNESDAY
FREE RIDE ABC NBC CBS
TV Commercials Local 659
Stock Footage/ Film and Stills

Dan Merkel Photography
Box 722, Carpinteria, CA 93013
(805) 648-6448

HOLLYWOOD'S OLDEST FILM SCHOOL
NOW ACCEPTING ENROLLMENTS FOR OUR NEXT
MOTION PICTURE COURSE
CAMERAS • SOUND RECORDING
LIGHTING • EDITING • EFFECTS
COMPOSITION • SCRIPTING • ETC.
Two Week Courses— Evening Classes
DANNY ROUZER STUDIO
7022 Melrose Avenue, Hollywood, California 90038
Request Brochure HC (213) 936-2494

ARRI REPAIRS
Expert & Reliable Repairs on all
Arriflex equipment including lenses
CP Roessel CinePhotoTech, inc.
48-20 70th St. Woodside, N.Y. 11372
212/424-1600

Filmmakers Cap
A handsome, quality cap in gold and navy blue, embroidered with the Tiffen name in gold lettering. One size fits all. Send $5.25 by check or money order (no cash). Outside USA add $1.50 for postage and handling.
TIFFEN®
Dept. AC 90 Oser Ave., Hauppauge, N.Y. 11788
(516) 273-2500 Telex 96-7748

ABOVE AND BELOW THE WAVES

film making at its very best from multi award winning director/cinematographer
JOHN STONEMAN, c.s.c.
Full 16/35 equipment and years of experience to back it up
MAKO FILMS LTD.
25 St. Mary Street, Suite 101,
Toronto, Ontario, Canada M4Y 1R3
(416) 960-3228

most of them are pretty competent.

QUESTION: Do you think the audience can tell the difference between cinematographers?

MOORE: Not the great unwashed hordes who plunk down their money at the box office. Film buffs and professionals can discern really good photography from mediocre work, but even they would have trouble identifying an individual's work without some prior knowledge.

QUESTION: When an audience reacts and says, "Wow, what great camera work!" do they really know what they're referring to, or are they just looking at postcard backgrounds?

MOORE: My instinct is that the average audience will be heavily impressed by certain shots or sequences . . . chase scenes, special effects, memorable shots of sunsets or seascapes, etc. Those shots will stick in the audience's mind and contribute to word of mouth as great photography, when, in fact, many capable cinematographers who, had they been there at the same moment and with a working light meter, could have gotten comparable shots. What really distinguishes a good cameraman, in my opinion, are situations in which you're lighting interiors or night exteriors . . . where you start from scratch. You start with a dark set and then you've got to build it up layer by layer of light.

QUESTION: Has camerawork changed very much in recent years?

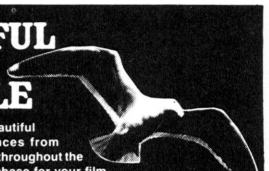
MOORE: I think that the technique of shooting has settled down to a dull roar recently, after the advent of such things as anamorphic photography, hand-held cameras, zoom lenses, soft lights, Steadicams, helicopter mounted, faster films, more efficient lights. All of these things have taken place in the last 10 to 20 years, and I don't see anything immediately looming on the horizon that's going to be any huge breakthrough. Of course, Eastman's newest color negative is going to help us in terms of having to do less lighting . . . moving the crew faster. Special effects photography has made spectacular progress, but it represents a small sector of the overall business of film production.

QUESTION: What about the new electronic activities that are happening? Will they bring on any changes?

MOORE: Well, the state of the art pres-

LIGHTING FROM HOLLYWOOD
(213) 851-0111
24-Hour Phone
Mole-Richardson Co.
SALES and RENTALS
937 N. Sycamore Ave.
Hollywood, CA 90038

CP and FREZZOLINI
CORDLESS CAMERAS
COMPLETE OUTFITS used, reconditioned **$2995** up
Includes Ang. 12/120 Zoom lens, magnetic recording head, amplifier, 400' magazine, battery.
PHOTOMART
CINE EQUIPMENT SUPPLIERS
6327 S. ORANGE AVE., • ORLANDO, FLA. 32809
Phone (305) 851-2780

BEAUTIFUL FILM FOR SALE

Now you can create beautiful motion picture sequences from film that has won awards throughout the world. Available for purchase for your film or television commercial is footage from the library of MacGillivray Freeman Films, the photographers of "Five Summer Stores," "Jonathan Livingston Seagull," "Skyriders," "Big Wednesday," and the American scenics in Stanley Kubrick's new film, "The Shining." Our special categories of incredible film images include:
AERIAL SCENICS AIRPLANES SURFING WAVES
CITIES BY AIR BALLOONS SAILING OCEAN
CLOUDS & SUNSETS SEAGULLS CLIMBING SKIING
NATIONAL PARKS HANG GLIDING SOARING & MORE
Write or call us for additional information and our color poster catalogue.
MACGILLIVRAY-FREEMAN FILMS
Producers of fine Feature Films, Television Commercials, and Corporate Image Films
Box 205, South Laguna, CA 92677 (714) 494-1055

FILMING IN AUSTRALIA
or S/E ASIA
NEED:
- BRUTES
- HMI
- QUARTZ LIGHTING
- AC/DC GENERATORS

CONTACT:
JOHN CUMMINGS
LOCATION LIGHTING PTY. LTD.
SYDNEY, AUSTRALIA
TELEX: SECCO AA 25468 Ans/Serv:
PHONE: (02) 913 7152 427 4444

BEHIND-THE-LENS FILTER HOLDERS

For Angenieux zoom lenses on 16mm Arriflex, Eclair and other cameras having rotating mirror shutters. These are sold in kits with 4 holders, gel cutter, tweezer and container for spare gels.

Ask for brochure

CUSTOM PHOTOGRAPHICS
P. O. Box 25007, Portland, Oregon 97225

NTL

IF IT'S EKTACHROME WE DO IT

SEND FOR NEW PRICE LIST & BROCHURE

NEWSFILM LABORATORY, INC.
516 N. Larchmont Blvd.
Hollywood, California 90004
(213) 462-6814

ACVL
ASSOCIATION OF CINEMA & VIDEO LABORATORIES

JIM CURRY

SERVICE ON MOVIOLA FLATBEDS

COVERING SOUTHERN CALIFORNIA
PHOENIX, LAS VEGAS, SAN DIEGO

213/762-3592

P.C. Board and Electronic Assembly Repair

UNDERWATER PHOTOGRAPHY
AL GIDDINGS

- Production
- Directing
- Filming
- Stunts/Doubles
- Props/Post Prod.
- **1980 Emmy for Cinematography**
- **James Bond 1981 *For Your Eyes Only***
- ***The Deep***

Panavision-35mm-16mm Equipment

Exciting/beautiful undersea footage and stills for sale.

Over 300,000 feet and 30,000 transparencies of whales, sharks, dolphins, wrecks, coral reefs, kelp, much more.

OCEAN FILMS, LTD.
6853 Buckingham Blvd.
Berkeley, California 94705
(415) 548-2110

ently is that shooting on tape, of which I do a lot in commercials, is still a pain in the ass. The equipment takes warming up, and it takes calibrating, and you've got to tweak it, etc., etc. And very often you're tied to some great lump of equipment in the back booth. By far, today, the most facile way of shooting a moving image is with film. But 10 years ago calculators were huge and now they're no bigger than a business card. As the market motivates it, video cameras will continue to improve to the degree that they could be excellent pieces of equipment when the end product is seen on a TV tube or TV screen.

QUESTION: You don't think that tape will ever work projected on a theatre screen?

MOORE: I don't see how it could compare to film. I mean, as things stand now, there's always that "raster," or grid, that must appear on TV, however many lines-per-inch America uses. If we go to a thousand lines-an-inch it will still always be there and distracting when you blow up an image on a screen that's say, 50 feet wide, like a typical neighborhood house. I don't know how we'll ever avoid that.

QUESTION: How do you feel when they reduce films to video for regular TV screens? Do they lose a lot?

MOORE: No, I've seen some very good results going from film to tape. It looks better to me than going from tape to tape, at this point in time.

COMMENT: When APOCALYPSE NOW was on television it lost so much.

MOORE: That was an edgy situation to begin with. Low-key, dramatic lighting in certain sequences didn't lend itself to TV. But I've seen some very good-looking video, like on the tape that comes out of BBC for PBS. It's shot on tape and transmitted from tape, and it looks quite good. American tape looks flat-lit to me, almost always. And that's one advantage that shooting film still has over shooting on tape in this country. You can shoot more dramatically, and they will broadcast it that way, whereas if you do it on tape in the first place, some guy's up there with his knobs tweaking a video signal to a hundred percent, washing a lot of shadows out.

QUESTION: Do commercials influence motion pictures in any way?

MOORE: I think there was a period of

CANADA'S LARGEST
LAB AND SOUND FULL SERVICE ORGANIZATION

BELLEVUE *Pathé*

MONTREAL
2000 Northcliffe Ave.
Montreal, Que. H4A 3K5
Tel.: 514-484-1186

TORONTO
720 King St. West
Toronto, Ont. M5V 2T3
Tel.: 416-364-3894

Pathé Sound Studios
121 St. Patrick St.
Toronto, Ont. M5T 1V3
Tel.: 416-598-2521

*A DIVISION OF ASTRAL BELLEVUE PATHÉ LTD./LTEE

SUPERCINE

A Professional Super-8mm Laboratory

- Color duplicates
- A&B roll printing
- Fades and dissolves
- Scene-to-scene density correction
- Workprints with edgecoding
- Pre-striped prints
- Internegatives/release prints
- Magnetic striping
- Sound transfers/stereo/2-track
- Reduction printing — 16mm to S-8mm
- Blow-ups — S-8mm to 16mm
- Blow-ups — Reg. 8 to S-8mm
- S-8mm/Reg. 8mm to video transfers
- Cartridging

Send for our new price list

SuperCine Inc.
2214 West Olive Avenue
Burbank, California 91506
(213) 843-8260

BOOKS FOR PROS

Your Film and The Lab	9.95
Videotape Recording	29.95
Technique of Film Animation	26.95
Grammar of Film Language	30.00
Technique of T.V. News	24.95
The Animation Book	C 14.95; P 9.95
Special Optical Effects	29.95
Multivision	19.95
Lighting for Location Motion Pictures	C 16.95; P 10.95
Video Users Handbook	P 12.95
Basic Motion Picture Techniques	19.95
Technique of Documentary Film Productions	C 25.95
Creating Special Effects in TV & MP	9.95
Using Videotape	9.95
Optics	24.95

Order Direct from B & S

Please send me the book or books (by name) listed on this page. Enclosed is my check for $_____. Please send $1.50 handling and postage for first cloth book and 70¢ for each additional cloth book (50¢ for paper). Calif. residents add 6% sales tax. **BIRNS & SAWYER, INC., 1026 North Highland Avenue, Los Angeles, California 90038 • (213) 466-8211.**

CAMERA ASSISTANCE
35MM & 16MM
ECLAIR NPR XTAL
(213) 877-7979
David Waelder / Cinematography

We Sell (& SHIP ON NEXT BUS/PLANE OUT)
Scotch'n Kodak
AFTER HOURS!
FILM STOCK, VIDEO TAPE, AUDIO TAPE, LEADER & SUPPLIES
RAFIK 475-7884
814 BROADWAY, NEW YORK NY 10003

BLOW-UP
HIGH QUALITY
35MM NEGATIVES
FROM YOUR 16MM ORIGINALS
Stock Shots Enlarged to Match-in with your 35mm Negative
Complete Pictures Transferred to 35mm
Call—Adrian at (213) 463-3178
CINESERVICE, INC.
1459 North Seward Street
Hollywood, California 90028

T-Shirts
for Filmmakers
Twenty-one popular professional film equipment designs. Write for free brochure.
alan gordon enterprises inc.
Dept. TS
1430 N. Cahuenga Blvd. Hollywood, CA 90028
Telephone: (213) 466-3561 • (213) 985-5500

MUSIC
with
FREE USE LICENSE
Record albums, cassettes or ¼-inch reel-to-reel
Specifically recorded for today's filmmaking and other audio-visual needs. Series of albums containing an extensive variety of music. Free catalog and demo upon request.
EUROPE
Comprehensive Video Supply
565 Kingston Road
London S.W. 20. 8SA
England
JAPAN
Japan Illust Music Ltd.
Room 204, Catherina Yoyogi
2-22-5, Yoyogi, Shibuya-Ku
Tokyo, Japan
ARCAL PRODUCTIONS Ph.(415) 369-7348
2732 Bay Road, Redwood City, CA 94063

time when they did have some influence that has long since been assimilated – for example, the sort of soft lighting that was being done in commercials and had never been widely used in feature films. It was in contrast to the good old, sharp, hard-light look. The use of zoom lenses was first embraced in a big way by commercials, not just for the purpose of the zoom effect, but it was discovered, as many cameramen will admit today, that a zoom lens left on a camera, particularly in exterior situations when you're working at a fairly good F stop, is simply a lens with an infinite variety of focal lengths.

QUESTION: Do you think that the skills have caught up with the camera technology?

MOORE: Yes. As a matter of fact, there has even been some retrenchment. For example, there was a period that began, say 20 years ago, where there were tremendous technical revolutions going on. Every studio had its own film system. Paramount had Vistavision. RKO had Superscope. Fox, of course, had Cinemascope, MGM took Panavision under its wing and had what they called Camera 65, their super big-film process. All of that went away when it was discovered that it was unnecessary to shoot films in these big negative formats, like "Ben Hur," "Dr. Zhivago," and "Lawrence of Arabia," which were all shot on 65mm film. When it was discovered that you could shoot 35mm anamorphic and blow it up to a 70mm print, producers were saying, "Hey, why bother with this heavy, terribly expensive equipment when we could shoot with something smaller and blow it up to the same results?"

QUESTION: What are you doing now?

MOORE: Well, at the moment I'm working with the producers and writer on a film that I would direct in England later this year. And I have a couple of other properties that I'm developing, because I would like to continue directing in addition to shooting film.

QUESTION: You did direct one.

MOORE: I did direct one, yes . . . a film that we shot in Israel. It was a modest budget thing called THE CIRCLE OF IRON, starring David Carradine. It was a quasi martial-arts film with a marvelous cosmic message to it.

QUESTION: When was that?

MOORE: It was shot late in '78 and re-

OXBERRY
Division of Richmark Camera Service, Inc.
Tel. (201) 935-3000
Cable: Oxberry Carlstadt N.J.
180 BROAD ST., CARLSTADT, N.J. 07072
OPTICAL PRINTERS
LIQUID GATE
ANIMATION & FILMSTRIP EQUIPMENT

SUPER BALTAR LENSES
We have the only remaining inventory of BRAND NEW Super Baltars, from 20mm to 152mm in the world todate! Write us or call for prices.
1994 N.E. 149th St.
No. Miami, Fl. 33181
(305) 949-9084,9085
NCE OF FLORIDA, INC.

NOSTROMO
(905) 548-6384
MEXICO
production assist.
arri sr and arri III.
sound and lighting
equipment.

FILM/VIDEO SERVICES
CANADA
Since 1963
Complete Producer's Services
Crews, Equipment, Post-Production
GRATTAN PRODUCTIONS INC.,
4606 St. Catherine St. W.,
Montreal, P.Q. H3Z 1S3/Canada
(514) 932-1463

BOLEX ACCESSORIES
- 24-Frame Sync. Camera motor 115 V
- Var. Speed Battery Camera motor 24V
- 400-ft. Magazine w/400' counter in camera
- Intervaltimer—Range 1½ sec. to 36 min.
- Animation motor. Fits single-frame shaft

Write for Bolex Accessory Catalog
STEVENS ENGINEERING CO.
402 KINGS RD.
NEWPORT BEACH, CA 92663

india
FILMING FACILITIES
ASIAN FILMS
72, JANPATH, N.DELHI-1
Cable: Moviphoto,
New Delhi (India);
Telephone: 320440

B&H FILMO 70 SERIES
Professional 16mm Cameras
Sales • Service • Repair
An exclusive product of
ALAN GORDON ENTERPRISES, INC.
1430 N. Cahuenga Blvd., Hollywood, CA 90028
Telephone: (213) 466-3561 • (213) 985-5500
TWX: 910-321-4526 • Cable: GORDENT

ANIMATION
LEARNING KITS,
SUPPLIES, EQUIP.
New No. 107 Color Catalog $2.00
heath productions, inc.
1700 N. Westshore Blvd., Tampa, FL 33607

WE BUY
Film Stock
Video Cassettes
TOP CASH
PLUS 50% OF SHIPPING
RAFIK (212) 475-7884
814 BROADWAY, NEW YORK, N.Y. 10003

DON'T LOSE YOUR HEAD!
We will renew your Fluid Head and overhaul it completely to be BETTER THAN NEW! Write or call us for our super fast service and low prices.
1994 N.E. 149th St.
No. Miami, Fl. 33181
(305) 949-9084,9085
NCE OF FLORIDA, INC.

L. J. ROBERTS
Cinetechnician—Cinehistorian
Certified STEADICAM® Operator
Member: IATSE 659—IATSE 159—SMPTE
Associate Member: SOC—BKSTS—PMPEA
8033 Sunset Blvd.—Suite 1016
West Hollywood, CA 90046

BOLEX REPAIR IN HOLLYWOOD
L.A. MOVIES
1017 COLE AVE.
HOLLYWOOD, CA. 90038

STUNTMAN®
Black **STUNTMAN®** T-Shirt with white design silkscreen lettering. 100% cotton shirts that are great looking, extra comfortable and fun to wear. Not sold in stores!
$9.00 each or SAVE - 2 for $16.00
FREE **STUNTMAN®** patch with each shirt ordered.
Specify S,M,L,XL Satisfaction Guaranteed. Send check or Money order to:
STUNTMAN PRODUCTS, DEPT. 120
8033 SUNSET BLVD., HOLLYWOOD, CALIFORNIA 90046

HiQUALITY OPTICALS
ALL FORMATS: 35, 16, s8, Slides
TITLES, EFFECTS, BLUE SCREEN
PRICE • QUALITY • SERVICE
(415) 495-4428
860 Second St. San Francisco, Ca. 94107

PETER M. GILBERT, CINEMATOGRAPHY
DOCUMENTARY • INDUSTRIAL • FEATURES
Personal Equipment Includes:
Aaton 35 mm Camera
Aaton 7 LTR 16 mm Camera
Arriflex 16S Camera
Lowel 'D' Kit
Lowel 'Soft Lights'
Mini-Cools
Packages starting from $200 per day...
(BUS.) 312-799-9210 CHICAGO, USA (HOME) 312-798-2496

leased in '79. It didn't lose money, but it didn't go through the roof by any means, because there was such an odd mixture of elements in the film. In any case, it was a terrific experience and I felt very comfortable doing what I was doing.

QUESTION: Were you thinking of the camera or were you able to forget the camera and think in terms of your actors?

MOORE: No director can afford to "forget" the camera, because if he does, he's in for an occasional surprise and certainly will miss opportunities to improve a shot. I had an English cameraman, and although it was his first full feature, my first priority and my first attention was to the performers. But, at the same time, I'm not the type of director who goes back to the trailer and waits for the cameraman to light the set. I was there with him. So maybe I hung in more that I should have, but there are other directors who do the same thing, you know, who like to be there to watch and comment, and that was what I was doing.

QUESTION: How do you feel about a director doing that to you? Would you mind that?

MOORE: Never. I have no aversion to people, including script supervisors or whoever, wanting to look through the camera to see what the shot is. I want to be as helpful as possible to everybody on the set, up to the degree that it begins to slow me down. And in terms of the director himself, I want to hear his ideas on how to frame and move. I mean, it's imperative for the director and cameraman to work closely together. My ego doesn't demand that "this is my picture and you stay away from the camera and I'll let you know when we're ready and you'll like the dailies, don't worry." I think that's a lot of garbage.

QUESTION: Do you think you've learned anything about directing from John?

MOORE: Yes . . . things too numerous to mention. Perhaps what impressed me most is his listening to other people's ideas before he makes up his mind. And then, let me tell you, once he's made it up, that's it. Someone would say, "John, why don't you do this; you should do that." And he would say, "That's a marvelous idea, darling. Thank you, thank you very much." And he'd usually go right back and do exactly what he was going to do in the first place. And he'd be right. ■

More classified ads from Page 634

FOR SALE: 35MM animation camera, 35mm camera movements, 16/35mm optical printer, cameras, optical printer lamphouses. (213) 246-0995.

SUPPLIES

BLACK LEADER, 16mm fresh stock, guaranteed $.04/ft. Min. Order 2000 ft. Complete lab services & supplies. LEO DINER FILMS, INC., 350 Golden Gate Ave., San Francisco 94102, (415) 775-3664.

MISCELLANEOUS

LASZLO KOVACS, VILMOS ZSIGMOND OR OWEN ROIZMAN will teach an intense one-week **CINEMATOGRAPHY & LIGHTING WORKSHOP** in the restored gold rush town of Nevada City, CA. SEPTEMBER 12—18, 1982. Call or write for complete details: **TAHOE PHOTOGRAPHIC WORKSHOPS,** P.O. Box 3060A, Truckee, CA 95734. (213) 202-3443 or (916) 587-4500.

PRODUCER SEEKS FILM PROJECTS either partially or fully funded. Has had low-budget features in "Top 50 Grossing Films" every year since 1979. Send info—no scripts—to: MEDIA INCORPORATED, 4347 Pacheco Street, San Francisco, CA 94116.

CAMERA/SOUND team BASED IN LATIN AMERICA: fully equipped, Eclair ACL & NPR, Nagra 4.2. Four languages spoken. Will travel anywhere. Contact us for credits. Detach ad. CHARLES MARTINEZ/SERGE GUITTON, Rua Bambina 86/307, Botafogo, (22251) Rio de Janeiro, BRASIL.

Coming in August:
We Tell You the Tale
of
Special Effects and Computer Imagery
for
"TRON"

MOVING?

PLEASE NOTIFY US
6 WEEKS IN ADVANCE

Miss/Mrs./Mr.
Name (please print)
New Address Apt. No.
City State Zip

MAIL TO
AMERICAN
CINEMATOGRAPHER
P.O. Box 2230
Hollywood, Ca.
90028

ATTACH LABEL HERE for address change or inquiry. If you are receiving duplicate copies of AMERICAN CINEMATOGRAPHER, please send both labels. If moving, list **new** address above.

BUY — SELL — SWAP HERE

EQUIPMENT FOR SALE

MITCHELL NC inc. blimp with Baltar lenses, 2-1000' mags, 110 sync, 220 sync & var. speed motors, follow focus, plus extras. Mint condition. MITCHELL CUSTOM HI-SPEED/STANDARD with 50mm Baltar, var. speed motor & 1000' mag. Mint condition. (412) 343-8700, 9 a.m. to 5 p.m.

FREZZOLINI MC-571-DC 16mm crystal controlled self-blimped camera, Pan Cinor 17-85 f2.0 zoom w/8" finder, 400' mag, internal battery, charger, MA11 amplifier w/power pack and charger, CP-16 case, new condition, $1,295. Uher 1000 recorder w/crystal control, mic, charger, leather case, new condition $495. MIKE (904) 376-3133.

THREE CP-16 R/A cameras with 12-120 & 10-150 zoom lenses, mags, batteries & cases $6,000 & $7,000. One Arri BL 16mm with 9.5-95mm lens, mags, single system sound & accessories $8,000. One Arri S 16mm, no lens $2,000. Plus rewinds, synchronizers, viewers, splicers & other editing equip. Contact: GARY HARPER, KING Television, 333 Dexter Ave. N., Seattle, WA 98109.

ARRI 16BL, 12-120mm Ang., matte box, 2 mags, remote switch, battery belt, cables, Miller pro tripod, Arri case, $6,500. Nagra 4.2L, QPM-1-200's, QSLI, QFM-60, ATN-2, speed varier, leather case, $3,500. JOHN TEICHMANN, (314) 522-3941.

FOR SALE: 35mm animation camera. 35mm camera movements, 35mm VistaVision movements, 16/35mm optical printer, cameras, optical printer lamphouses, (213) 246-0995.

ANIMATION MOVIOLA like new, 8 x 10 screen, mag-optical-16mm, Model ULP-VCS, 2 motors, for rotoscoping or lip-sync editing, $1,895. (213) 456-2859.

STEENBECK ST900w 6-plate 16mm flatbed. Larger console w/plenty work space, dust cover, recently serviced, excellent condition, $12,500. Call or write: JAMES AGEE FILM PROJECT, 1730 J.P.A. #4, Charlottesville, VA 22903. (804) 295-0262.

RCA original rack-mounted 16/35 recording equipment, complete magnetic system. Also, RCA 16/35 optical recorders, Rangertone ¼" magnetic recorder w/Rangertone synchronizer. (412) 343-8700, 9 a.m. to 5 p.m.

NAGRA III & Nagra resolver like new $2,850. MAGNASYNC 16mm transfer machine & amplifier, $985. (213) 456-2859.

FOR SALE: 35mm single headed optical printer, $45,000. (213) 246-0995.

ARRI 16SR w/10-150 Ang. with zoom assist, 3 mags, 2 onboard batteries, extension finder & accessories. PERSONAL CAMERA, NOT A RENTAL. (301) 589-0918.

BEAULIEU R16B (PZ) 12-120 f2.2 Ang. auto zoom, electric handgrip, 500mA battery, charger, 200' mag, Zero Halliburton case, $2,095. Send for a complete list of 16mm equipment. Over 50 cameras in stock. Call/write CHAMBLESS PRODUCTIONS, 2488 Jewel, Atlanta 30344. (404) 767-5210.

BOLEX H16 REX-5 w/Vario-Switar 18-86 EE (auto exposure), f2.5, mint body, good lens, w/case $1,100. (617) 661-6879.

CP16/A WITH SHARP 9.5 ANGENIEUX with AV30 finder, 4 mags, 2 sound heads, batteries, chargers & CP location case. Camera and lens recently serviced by Cinema Products & Century Optics. All equipment in nice shape. $3,750 or nearest offer. MIKE PARKER (412) 231-2989 or 237-1255.

OXBERRY FILMMAKER 16MM ANIMATION STAND & CAMERA. Bipack, rotoscope, rollaway pegs, underlight, other extras. Excellent condition $18,000. CENTER FOR CINEMA ANIMATION, Tully, NY 13159. (607) 842-6668.

BEAULIEU PZ, mint. 12-120 Ang., power zoom, auto aperture, 200' mag. Sync pulse generator, 2 handgrips with 100MA & 400 MA batteries, plus charger & carrying case, $2,995. (213) 456-2859.

EQUIPMENT FOR SALE

MOLE RICHARDSON LIGHTS, brutes & 170 arcs, 10k, 5k, 2k, 750w solarspots w/stands, barn doors, effects, & complement of cable, bulbs, & D/C generating equipment. Package deal preferred. Terms possible for qualified buyers. (412) 381-1222 or (412) 343-8700.

CP16A with Angenieux 12-120mm f2.2 with 7½" VF AVC, crystasound module, mag, batteries and recharger. MINT CONDITION. System has been used less than 100 hours, $4,900. (201) 228-5637 evenings.

16MM ARRIFLEX BL-9.5-95 Ang. 2-400' mags, CP crystal motor, matte box, barney, filters, Arri case for all. One owner camera, excellent condition $7,800. or best offer. (916) 371-0697 or P.O. Box 24671, San Jose, CA 95154.

NAGRA IV-L FOR SALE. 3-speed synchronous tape recorder with ALC capability. Facilitates condenser & dynamic microphones. Varied input possibilities. Case & strap included. Excellent condition. **BEST OFFER.** Contact: (212) 247-4710.

ARRIFLEX 16SR CAMERA PACKAGE complete with 2-400' mags, 2 onboard batteries, charger, 10 to 150 Ang. zoom lens, custom cases, etc. All equipment in superb condition. Call for price. PRODUCTION SYSTEMS UNLIMITED, (213) 840-0155, leave message.

MOVIOLA M-86AH, 16mm flickerless flatbed, excellent condition. (213) 661-6798.

MITCHELL 35NC late model, 5 lenses, 2-1000' mags, matte box, viewfinder, follow focus, matte cutter, wild & sync motors, tripod, cases, excellent, $6,000. 2 35 Acme projection heads with shuttle movements, $4,500 ea. (404) 525-8701 or 953-6465 evenings.

FILM LABORATORY equipment for sale. 35mm, 16mm & video equipment surplus to requirements available. Please contact DAVID BUCK, UK, Tel: 44 753 76611 or Telex: 848393 BUCLAB G.

PHOTOSONICS ACTIONMASTER 500. 16MM IPDL WITH INTERNAL CRYSTAL FOR SYNCH SOUND, PERFECT CONDITION, PERSONAL RIG, LESS THAN 20,000'. Two 400' ULTRA-LITE MAGNESIUM MAGS, VAR. SHUTTER, TIMING LIGHTS, ANG. ORIENTABLE VIEWFINDER, BATTERY BELTS, POWER CABLES, NEW ANG. 12-120, FILTERS, RADIO CONTROL, SPLIT REELS, HALLIBURTON CASE. NEW $29,806, ASKING $22,500. CALL (505) 983-1207 anytime.

ARRIFLEX 16S/B CAMERA PACKAGE. Includes 16S/B camera body, 10mm/25mm/50mm Schneider primes, 12-120 & 12.5 to 75 Ang. zooms, 2-400' mags, torque motor, variable & constant speed motors, new Universal fluid head, standard & baby legs, hi-hat, custom camera case, filters, cables, batteries, etc., excellent condition. PRODUCTION SERVICES UNLIMITED (213) 840-0155, leave message.

SHURE microphone mixer model M67, $200. Model M68, $100. (505) 983-1207.

ARRIFLEX 16mm, Angenieux 2.2/12-120 zoom, Pan Cinor 2.4/17.5-70 zoom, Cinegon 1.8/10, Cine Xenon 1.4/25 & 2/75, 2 mags, wild & 24 fps motors, matte box, filters, accessories, $4,500. BRYAN, (517) 482-8622.

FAIRCHILD 70-07 Super-8 briefcase projector. Good condition, $400. BILL LOVIN, (919) 933-6339 nights.

16MM INSERT RECORDER, Magnasync 3000 with 2-track heads, 1 set electronics installed Selsyn interlock motor & 2nd Selsyn, remote start/stop/fwd/rev/record/play, and 19 inch enclosed rack, $4,500. PHIL WILLIAMS (215) 247-6863.

BOLEX REX-5, 16mm, 3 Switar lenses, Bolex tripod, meter. Cables & aluminum case. Xlnt cond., sacrifice $1,475. (Vista, CA.) (714) 724-4691.

ADAPTER: Arri B to Eclair stainless steel, $250. (505) 983-1207.

OXBERRY ANIMATION STAND. Filmmaker model, 16mm only. Complete with compound & accessories. KELLEY (312) 761-9533.

EQUIPMENT FOR SALE

FOR SALE: 4 Yoder conversion crystal controlled 400' cameras, magnetic sound, with 12-120 zoom & 9.5-95 zoom. Ea. with battery charger inverters & 2 400' mags. $1,000 ea. or all 4, $3,200. 5 Canon Scoopic 13-75 zoom lenses, charger, cases, $800 ea. or all for $3,000. 4 Cine Voice & 3-600s all converted to 1200' mags, with 13 mags, tripods, amps, optical & some magnetic sound, w/f1.2 12mm & some with Berthoit zooms, all for $5,200 or $1,000 ea. One larger Uhler 16mm printer, first $400 gets it. Or will sell complete 16mm B&W, & color processing machines, equipment & all stock. Clearing app. $40,000 in 6 months. Asking price $50,000. CHRISTIAN DULLNIG, 331 Shannon Lee Drive, San Antonio, TX 78216. (512) 828-4017.

FRENCH ACL, 2 x 400' MAGS, 1 x 200', BARNEY, 2 BATTERIES, 12.5-75 ZOOM, FILTERS, CASE $8,500 (U.S.) O'CONNOR 50 HEAD $900 (U.S.) TELEPHONE (416) 960-3228.

DUPLIKIN IV, 16mm 1:1 printer, $75. Call (703) 592-3701 during business hours.

CINEMONTA 8-PLATE 16mm 2 pix, 3 sound, mint condition, also racks, bench, chairs, etc. $18,000. (212) 686-1227.

ACME ANIMATION CAMERA, Model 5 16mm rackover. Mint. $6,000 or best. KELLEY (312) 761-9533.

SOUND EQUIPMENT FOR SALE: 2 Swintek Hitchiker wireless mikes. Swintek Mk 3/50a wireless mike, Swintek Eng trans. and handheld trans. w/ MK3 rec., 2-Schaffer/Vega diversity systems with body pacs, Nagra 4.2, Nagra III, Nagra SLO, Nagra QSLS, 2-Senn. 815s, Orange County Stereo Compex Limiter, Marshall Time Modulator, plus many more items. Call SCHARFF COMMUNICATIONS (212) 582-7360.

35MM × 400' B&H bipack mag, $450. Tel (808) 536-0571 or (714) 279-7269.

UNIVERSAL #2275 ball assembly and tripod top, new $130 postpaid. Refined Bolex rackover $65. AHC, (201) 561-8123.

35MM MITCHELL BNC 220 sync, 5 lenses, 2 mags. 35MM EYEMO reflex & zoom. 35MM ECLAIR CM3 body, 2 mags. 16MM KODAK K-100 w/Pan Cinor 17-75 zoom. 4 ea. XEROX #4 Animation Cel Camera $3,500-$4,700. ANIMATION STAND. ASSOCIATED ILLUSTRATORS, 654 Kennebec Ave., Takoma Pk, MD 20912 (301) 587-4942.

SIEMENS INTERLOCK Projector, 2 amps, Fischer speaker, spare motor and parts, mint condition. $2,500. (212) 686-1227.

2709 Bell SINGLE system sound camera, Cooke lenses, excellent production quality, optional with ultra sharp Nuscope anamorphic. (808) 536-0571 or (714) 279-7269.

MITCHELL 35mm NC, single lens reflexed, 5 lenses, 2-1000' mags, 3 motors, Raby blimp $6,500 or best. KELLEY (312) 761-9533.

16MM ARRI BL 12-120 Ang. zoom, 2-400' mags, crystal lock, battery, cable, case. (202) 686-2203.

FOR SALE: Whorl gear pan/tilt gear head, $7,000 or best offer. Call BERNICE (213) 879-8733.

WILDLIFE OUTFIT: Arri SB, 500mm Century 4.5, Miller-Pro tripod w/fluid head, 12-120 Ang. zoom, battery, cases, filters, $5,200. **4-PLATE EDITOR,** tape splicer, rewinds, Moviscop, synchronizer, $3,500. (914) 876-3686.

ARRI 16BL, 5-400' mags, 3 Cine 60 batteries, Ang. 9.5mm-95, crystal lock, zoom control, sync motor, univ. motor & many accessories, $8,500. (212) 677-6310.

ECLAIR NPR late ser#, Beala xtal, orientable finder, 3 mags, Ang. 9.5-95, $6,200. (415) 974-1982.

CP16RA, 10X ZEISS lens, LED's, mags, batteries, charger, $4,000. Also CP16A pkg with Ang. lens, $1,500 or offer. Beaulieu R16, 10X Ang. (303) 985-8933.

RATES: Ads set in lightface type 60¢ per word; minimum per ad $7.50. Text set in bold face or capital letters (except 1st word and advertiser's name) 80¢ per word. Additional $3.00 service charge on blind ads. Remittance to cover cost MUST accompany copy. Send to Classified Advertising, American Cinematographer, P.O. Box 2230, Hollywood, CA 90028. Deadline for copy is 1st of the month preceding date of issue. Subject matter limited to items and services pertaining to filmmaking, cinematography, video.

EQUIPMENT FOR SALE

CP-16R-P bloop lite & sync pulse, Ang. finder, 12-120 Ang., 4 mags, 3 bat., filters, barney, case & much more, like new $7,000. 2 Gordon gun cameras w/bore scope, bat., & chargers, 10mm Switar Arri 35, Cine 60 flat base, J-4 control, 40 Macro w/ filters. Ang. 25-250, Arri & Nikon mount, just overhauled, 1.6x Ang. extender, case & more, $4,850. One set Mitchell tripods, 1-std., 1 med., & 1 baby, $250. BEAU PEASE, 5841 Nagle Ave., Van Nuys, CA 91401 (213) 994-1055.

INTERLOCK 16/16 PROJECTOR BAUER P6 STUDIO. Excellent condition $5,000. (212) 651-0175.

EQUIPMENT FOR SALE: Digital video systems DPS-1 TBC; Hitachi FP-40SS ENG/EFP/studio camera, Hitachi HR-200/HST 1" type C w/SLO-MO, Hitachi SK-91 ENG camera, Panasonic AU-700 edit system, Conrac 7641 Hi-Rez monitor, Ikegami TM-142 RHA Hi-Rez monitor, Ikegami ITC-350 ENG camera, 3M Chroma Keyer for #6114 SEG, 3M #5130 Matrix wipe generator, Jatex USEC-42T editor, Sony VP-3000 ¾" portable player, Cinema Products 5P001 Camraprompter, Ampex ATR-700-2, 3M #210 color bar/sync generator, Quanta Q-VII character generator. Call TED or TERRY at (518) 449-7213.

PHOTOSONICS Actionmaster, 400' mag, Frezzolini, Angenieux viewfinder, Arriflex bayonet, split reels, accessories, Halliburton. $12,200. (30% off list). CENTURY 230mm $490. CENTURY 385mm $340. 3M VR-210 Videocassette ¾" recorder $1,000. MARTY STOUFFER PRODUCTIONS (303) 925-5536.

MITCHELL MARK II camera, top load, 4 Super Baltar lenses, 25-250 Ang. zoom lens, wild motor, 110 sync motor, 2-1000' mags, registration film clip punch, adapter for standard (GC) motors, accessories, $21,000 or best. KELLEY (312) 761-9533.

ECLAIR NPR 12-120 Ang. 3 mags, orientable finder Beala xtal, $5,900. (415) 974-1982.

OPTICAL PRINTER 16mm, 3 heads, unique. Sacrifice $4,800 complete. (213) 994-2098.

COMPLETE THEATRE equipment as entire package. Gulf Breeze, FL. Call toll free (800) 547-4905.

ACME, OXBERRY, BELL & HOWELL, printers, animation stands, Mitchell, Arriflex cameras, Hazeltines, liquid gate, film processors, editing machines, much more. CINEMART, INC. 99 E. Magnolia Blvd., Burbank, CA 91502. (213) 842-7165.

ECLAIR ACL French excellent condition, 4-200' mags, 9.5-57 Ang., $6,500. (415) 974-1982.

MITCHELL BNCR, crystal motor, 20-120mm zoom lens. Plus 2-1000' mags, 2-400' mags & accessories, $33,500. Call PAT SINGH (213) 467-7337.

ARRIFLEX 16S Canon 12-120 zoom (new price $2,800) 2 mags, torque, camera motor, pistol grip, battery, camera case, blimp w/case. Package excellent condition, $5,000. EDWARDS, 901 Chillicothe St., Portsmouth, OH 45662.

AATON 7 LTR CAMERA PACKAGE WITH: LED light meter, video tap, swiveling viewfinder, 2-400' mags, left & right handgrips, removable shoulder pad, 2-batts w/charger, sound barney, 9.5/57 Ang. zoom, Series 9 filters: 85, 85N3, 85N6, French flag adapted for camera, changing bag, 2 metal cases. Purchased in March 1981, still under warranty. For information call (212) 581-0649, ask for LISA GROSSMAN.

5.7 TEGA CA-1 mount $600. 12.5-75 Ang. CA-1 mount $500. CA-1 to C mount adapter, $75. (415) 974-1982.

SELF TRACKING pipe dolly systems from $450. Microphone fishpoles, reflectors, custom-built grip equipment. ED DUPRAS, Rosebud Dolly Works, 19204 6th SW, Seattle, WA 98116. (206) 935-9683.

16 ARRI SR, late model w/2-400' mags, 2 batts, barney, case, etc., $17,000. (213) 874-0814.

ARRI 11 C excellent. Schneider 28, 50, 75, Ang. 35-140, wild motor, 3-400' mags, 2-200' mags, case, hi-hat, $5,000. (212) 675-6464.

FOR SALE: 35mm single headed optical printer $45,000. (213) 246-0995.

MAGNASYNC, 2200 16mm rec/rep, 2-602 dubbers, amps, mixer, Selsyn interlock, complete system $3,700. Magnasync 602 rec/rep $1,150. Ang. 12-120 (Arri) $850. Canon (Arri) 12-120 macrolens $1,650. Kling time lapse animation system. Maier-Hancock hot splicer $150. Pageant projector $300, Uher 4000L recorder $750, Arri BL 1200' mag $800. Producer cutting overhead. (512) 478-2971.

EQUIPMENT FOR SALE

9.5-57 ANGENIEUX multicoated, Arri B-mount, new $3,800. 9-50 COOKE w/Arri B-mount with J-4 bracketry & filter ring, $4,100. (213) 874-0814.

FRENCH NPR, 3-400' mags, Alcan v/s motor, Ang. orientable viewfinder, barney, 2 Cine 60 battery belts, cables, cases & accessories, $7,000. CARL TEITELBAUM (212) 431-3860.

35MM UPRIGHT Moviola. 2 pic, 2 sound, $3,500. (312) 642-4475.

HOUSTON-FEARLESS, model A11, film processor, black & white reversal, 110v, 35 amps. Also, one Bausch & Lomb photomicrograph with accessories. Contact: UNIVERSITY OF NEBRASKA, Lincoln, Mike Cacak, (402) 472-2422.

ARRI II C, 4-mags, Ang. 25-250, Zeiss 16, Kilfit 600, all or part. BOB STEADMAN. (213) 390-4056.

400' **ARRI 35 BL** mags, ea. $3,200. 1000' **ARRI 35 BL** mags eac. $3,600. **35 ARRI BL** high speed lens housing with follow focus gear, bellows mattebox, focusing strips, optical flat, $1,800. Call: (213) 874-0811.

MITCHELL 35 high speed, 2-400' mags, $2,950. SYNTHETIC IMAGE, (412) 422-0240.

NAGRA III with ATN supply, DIN amplifier, Neuman KM54 mic with Nagra supply, FM pilot meter, excellent condition, $2,000. E. W. CHIAUARINI, 536 W. 13 Mile Road, Royal Oak, MI. (313) 435-9688.

SITUATIONS AVAILABLE

HELP WANTED TECHNICAL PERSONNEL

IDI has openings in Miami and Atlanta for camera/optical, electronic technicians, rental sales personnel, super secretaries. 16/35mm or video experience ESSENTIAL. Very interesting growth potential for career oriented, energetic non-smoker. Resume to IMAGE DEVICES, 1825 NE 149 St., Miami, FL 33181.

POSITION AVAILABLE: Mature, stable person with solid experience in editing and post-production management for high-quality, non-theatrical film production. Must have ability to work closely with clients and to work in a cooperative, team-oriented environment. **UNUSUALLY GOOD OPPORTUNITY** for the right person who is willing to make a big investment of themselves and their energy. Three verified samples of work done within the past two years and a complete resume are required for consideration. Staff position with excellent opportunity for growth will require relocation to Indianapolis. Call Clark Ballard at PRODUCERS INTERNATIONAL CORPORATION, (317) 924-5163.

PROFESSIONAL MOTION PICTURE CAMERA TECHNICIANS. Alan Gordon Enterprises in Hollywood, CA has openings for technicians experienced in professional motion picture camera repair. For interested applicants with a background in camera mechanics and optics, A.G.E. offers a pleasant atmosphere and working conditions in the Hollywood area. Salary commensurate with experience. If interested, please call Sid Spalding at (213) 466-3561.

WANTED

RAW FILM STOCK & VIDEO TAPES. Will consider all types. Top cash. RAFIK, 814 Broadway, NY 10003. (212) 475-7884 collect.

LENS, 140 degrees or wider for 35. Also 95 degrees or wider for 16. Full frame only. Must be reasonable. JEWELL, 2040 Garden Lane, Costa Mesa, CA 92627. (714) 548-7234.

35MM MOVIOLA, 35mm splicers and synchronizers, 35mm Mitchell cameras. (213) 246-0995.

I WILL BUY or sell your used equipment fast. DICK WRIGHT, (213) 462-4616.

35MM FEATURES wanted. B/W & Technicolor. Private collector. BOB LEADER, 5618 Timberbrook, Marysville, WA 98270 (206) 659-0219.

WE NEED MITCHELL 16 – 35 cameras of all kinds. Our export market permits us to pay higher prices for clean cameras. Cash or certified check. Write or call! LLOYD'S CAMERA EXCHANGE, INC., 1612 N. Cahuenga Blvd., Hollywood, CA 90028. (213) 467-7956.

WANTED: Professional motion picture equipment, 16mm & 35mm, cameras, lenses, lights, sound, editing, projection, lab, for outright purchase or consignment. Supply complete technical description and price for immediate reply. Ted Lane, ALAN GORDON ENTERPRISES, INC., 1430 N. Cahuenga, Hollywood, CA 90028 (213) 466-3561.

WANTED

USED & SURPLUS film or video equipment wanted for resale. No risk guarantee. Free written evaluation for buyout, trade-in, or consignment. Equitable conditions, all items insured while in our plant. Call, write: Tony Zaza, Bob Lovelace, TECH CAMERA, 6370 Santa Monica Blvd., Hollywood, CA 90038. (213) 466-5391.

ZEISS 18mm and 35mm super speed lenses, new or used. Call Al Giddings at OCEAN FILMS (415) 548-2110.

BIRNS & SAWYER, INC. WILL BUY YOUR EQUIPMENT OR SELL IT ON CONSIGNMENT. THIRTY YEARS OF DEPENDABLE SERVICE TO INDUSTRY PROFESSIONALS. YOU CAN BANK ON US YEAR IN – AND YEAR OUT. COME IN OR CALL BILL SUTPHIN FOR A QUOTE. BIRNS & SAWYER, INC., 1026 N. HIGHLAND, HOLLYWOOD, CA 90038. (213) 466-8211.

LLOYD'S CAMERA Exchange needs used 16 – 35mm equipment. Will buy or consign. Call PAT SINGH (213) 467-7337.

WESTERN ELECTRIC SOUND EQUIPMENT (working or not): Amps, tubes, speakers, horns, drivers, microphones, mixers, others (213) 576-2642, DAVID YO, P.O. Box 832, Monterey Park, CA 91754.

BELL & HOWELL 16MM cameras, 400' mags, electric motors. Kodak K-100, any parts for above cameras. State price and condition of equipment. NATIONAL FILM COMPANY, 10302 Kingspoint, Houston, TX 77075.

WILL TRADE Northwest Montana land (½ ac. to 100 ac.) for 16mm camera gear. Need camera, lenses, tripod, sound recorder, etc. DAVID S. BENNETT, P.O.B. 1027, Thompson Falls, MT 59873.

16MM COLOR footage on the topic of American nature and wildlife. Outright purchase of camera original preferred, although 3-year exclusive, and non-exclusive thereafter, usage of master will be considered on exceptional material only. Require programs with 25 minute body, although shorter sequences will also be considered. Looking for completed footage only, not cameramen for hire. Mail written description to: MARTY STOUFFER PRODUCTIONS, 300 So. Spring St., Aspen, CO 81611.

SERVICES AVAILABLE

16MM EDITING ROOMS, LOWEST RATES. Monthly. Fully equipped, flatbed or Moviola (213) 994-2098.

16 MM FLATBED ROOMS in Santa Monica. Fully equipped w/transfer facilities. RAMSGATE FILMS (213) 394-8819.

QUALITY CAMERA & lens repair. Arri, Cinema Products, Mitchell, Auricon, Bell & Howell, NPR, Angenieux, Canon, Fujinon. KRUEGER'S KAMERA REPAIR, Rt. #2, Box 13, Ennis, TX 75119. (214) 875-5566.

BOLEX REPAIR in Hollywood. L.A. Movies, 1017 Cole Ave., Hollywood, CA 90038. (213) 464-5929.

STEADICAM OPERATOR/CAMERAMAN available for assignment. 15 years experience in commercial, documentary and feature production. Exceptional skill with Steadicam (5 years), 16mm equipment package complete with sound gear. Will add great dimension to your project. JEFF MART (206) 385-5140.

QUALITY CAMERA SERVICE

Complete repair and machine shop, parts department, and top experienced technicians are available at Birns & Sawyer, Inc. to service your camera, lenses, tripods, and related equipment. Send in your equipment for an estimate to our Service Dept: Call (213) 466-8211, Peter Anway, BIRNS & SAWYER, INC., 1026 N. Highland Ave., Hollywood, CA 90038.

O'DOHERTY TECHNOLOGY
A REPUTATION WELL EARNED

Technical expertise for the professional cinematographer. Nobody gets those sync cameras quieter. Buyers and sellers of used equipment. Authorized Eclair and Arriflex dealers. Super 16 specialists O'DOHERTY, 1303 Main St., Port Jefferson, LI, NY 11777. (516) 331-1395.

LOCATION SITES: Long Island, NY, areas specializing in mobile props, planes, boats, etc. Call KAREN TERRY, (516) 724-3964 or (516) 735-4100.

FERCO, M7 VIDEO TAPES LEASE TOWARD PURCHASE: IIC, 35BL., 16SR. Focus and iris adjustments, many advantages in stock. Contact: FERCO, 707 11th Avenue, New York, 10019. (212) 245-4800. Mari G. Nahra, Sales Manager.

See additional classified Page 632

"Several years ago we made a trip to New York to interview film laboratories. We at Jayan Films had been having a terrible time with inconsistent and less than acceptable quality work from all of the labs we had been using on both coasts.

"When we walked into TVC... the president of the company called in all the people from the lab to let us know exactly who we would be working with. We were given home phone numbers and told what ever had to be done to get the job done right would be done. The TVC people have never varied from that commitment. We have been dealing with them exclusively ever since and have not regretted it.

"The people at TVC understand how I light and shoot and want the printing to look. The quality control is beyond reproach.

"And here's another story about TVC. Recently, when I was in Florida shooting 16mm film due to a very tight budget, I had to use a 400mm lens that would only open to 5.6. We were able to shoot a half-hour before sunrise and using Chem-Tone... there was no noticeable grain and the picture was clear and sharp.

"Since we are in Atlanta our agency clients often ask about shipping to and from New York. We have never had a problem with this and I emphasize *never! As I knock on wood, I am delighted to say we have never lost a foot of film in transit between Atlanta and New York."*

"At TVC the quality control is beyond reproach."

Jimmy Collins,
Director/
Cinematographer
Jayan Film Productions

Only tvc has Chem·Tone

tvc laboratories, inc., 311 west 43rd street, new york, new york 10036 (212) 397-8600

When Cooke solved your image problem, they created one of their own.

Zellan won't try to convince you that Cooke is the lightest, fastest, cheapest 16mm zoom you can own.

And asking for a lens that gives you everything is asking for the impossible.

Instead, Cooke chooses not to compromise on more critical qualities. And to risk its public image. So you don't have to compromise the one quality you value most—your image.

The Cooke 9-50mm lens sacrifices a few ounces of weight. To give you superior image resolution, contrast and color rendition—equal to any prime. It's still true that the best ideas carry the most weight.

Further, by eliminating an f/stop, the Cooke yields unvarying sharpness at every aperture. So, rather than muddy results with the iris opened wide, Cooke stops before your image goes.

And instead of manufacturing a lower-priced lens, Cooke risks profit for perfection. With dazzling optical and mechanical design features. Like Varomag® coatings. To stop flare forever.

Advanced features like these are reflected in Cooke's higher $6,000 price. But they'd rather see bad reflections on their image than on yours.

So before your next picture, you'll want to see Zellan's new lens department. With expert service by master lens technician Lenny Shorr. After all, if a sharp image is your bag, you'll need the Cooke that's in our bag.

Cooke 16mm Lenses
9-50mm
10.4-52mm (Super-16)

Zellan Enterprises, Ltd.
250 West 57th Street
New York, NY 10019
212/245-1598